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Citizenship
American and Canadian

Degrees Obtained

McMaster University, Hamilton, Ontario	Ph.D.	1988	Electrical Engineering
McMaster University, Hamilton, Ontario	M.Eng.	1985	Electrical Engineering
Queen's University, Kingston, Ontario	B.Sc. (Hon)	1984	Engineering Physics

Professional Experience

2015-20	Chair, Electrical Engineering Department, UCLA
2015	Consultant, Wireless Seismic
2012	Consultant, Creston Electronics
2009	Visiting Professor, University of Sydney
2003-09	Associate Dean, Research and Physical Resources, Henry Samueli School of Engineering and Applied Science, and Professor, Electrical Engineering Department University of California, Los Angeles (UCLA)
2002-03	Vice Chair, Graduate Programs, Electrical Engineering Department, UCLA
2000-02	Vice Chair, Undergraduate Programs, Electrical Engineering Department, UCLA
2000-	Professor, Electrical Engineering Dept., UCLA
1995-00	Associate Professor, Electrical Engineering Dept., UCLA
1991-95	Assistant Professor, Electrical Engineering Dept., UCLA
2003	Consultant, Texas Instruments
1998-05	Co-founder and Senior Member Technical Staff, Sensoria Corp.
1998-99	Consultant, Rockwell Inc., Costa Mesa, CA
1996-98	Consultant, Motorola Inc., Schaumberg, IL
1994-98	Consultant, PairGain Technologies, Tustin, CA.
1988, 91-95	Consultant, Mathematical Sciences Research Center, AT&T Bell Laboratories, Murray Hill, NJ.
1994	Consultant, Broadcom Corp., Irvine, CA.
1994	Consultant, Crow Associates, Colorado Springs, CO.
1989-91	Senior Engineer in the Transmission Research and Advanced Development Dept., Motorola/Codex, Mansfield, MA. Projects included research into high speed digital subscriber lines (HDSL), and multipoint modems.
1984-88	Teaching Assistant, McMaster University, Hamilton, ON, Canada
1981-84	(Summers) Student Engineer, Advanced Systems Division, Miller Communications Systems Ltd., Kanata, Ontario, Canada. Duties included simulation of satellite communications systems, and analysis of results.
1981-84	Douglas Tutor, Queen's University, Kingston ON, Canada

1978-80   Lifeguard/Swimming Instructor, Gloucester ON, Canada

Awards and Scholarships
2019   Senior Member, National Academy of Inventors
2017   Top 150 Alumni, McMaster University Engineering
2016   Distinguished Educator Award, Engineers Council
2012   UCLA 2012 Community Program of the Year Catalyst Award (for the three programs of the Engineering Science Corps).
2010   Erskine Fellow, University of Canterbury
2009   International Visiting Research Fellowship, University of Sydney
2009   Fulbright Senior Scholar (Australia)
2005   IEEE Fellow
1998   Allied Signal Award for Outstanding Faculty Researcher in UCLA School of Engineering and Applied Science
1998   Wireless Integrated Network Sensors (WINS) technology announced by the House Science Committee as one of the Nation's technology breakthroughs in the "Great Advances in Scientific Discovery During the 105th Congress" (September 24th)
1996   Okawa Foundation Award (for research in wireless communications)
1984-88   Natural Sciences and Engineering Research Council of Canada (NSERC) postgraduate scholarship
1986   Chapman Memorial Prize (Spar Aerospace, and McMaster University)
1981-84   J.H. Rattray Memorial Scholarship (Queen's University)
1982-83   NSERC Industrial Summer Research Award

Professional Offices Held
1996-99   Secretary, Board of Governors, IEEE Information Theory Society

University Service
2017-   Chair, HSSEAS Community College Outreach Committee
2017   Member, UCLA Education Innovation Task Force
2015-18   Faculty Co-Chair, UCLA Science Poster Day
2014-15   Promotion Accelerations Committee, EE Dept.
2013-14   Member, HSSEAS Freshmen Seminar Course Committee
2012-15   Founding Faculty Director, HSSEAS Tech Camp
2012-   Member, Courses and Curriculum Committee, EE Dept.
2011-14   EE Dept Representative, HSSEAS ABET Committee
2010-14   Signals and Systems Area Director, EE Dept.
2010-12   Undergraduate Curriculum Committee, EE Dept.
2006-09   Member, Campus Research Committee
2005-09   Member, Board of Advisors, JIFRESSE
2003-09   Member, Campus Space Committee
2004-05   Member, EVC's Academic Performance Indicators Committee
2003-09   Associate Dean, Research and Physical Resources, HSSEAS
2002-03   Vice Chair, Graduate Programs, EE Dept.
2002-12   Deputy Director, Center for Embedded Network Systems
2002-04   Member, Chancellor's pervasive computing committee

2001	Member, review committee for Computer Science Department
1999-02	Vice-Chair, Undergraduate Affairs, EE Dept.
1996-98	Chair, Undergraduate Curriculum Reform Committee, EE Dept.
1998	Chair, EE Dept. Annual Research Symposium
1996-99	Chair, Communications major field, and member, courses and curriculum committee
1994-98	EE Computer Eng. Committee
1991	Organizing committee, EE Dept. Annual Research Symposium

Other Professional Activities

2020-	Chair, California Engineering Liaison Council
2018-20	Vice Chair, California Engineering Liaison Council
2017-18	4-year college course articulation representative, Engineering Liaison Council
2017	Program committee member, Western ECEDHA regional meeting
2015	TPC Member, IEEE VTC Spring 2015
2014-16	IEEE Trans. Signal and Information Processing in Networks, Technical Liaison Committee member
2014	TPC Member, Wireless Health 2014
2014	Participant, NSF Medical Cyber-Physical Systems Workshop, Feb, 2014
2011	TPC Co-Chair, IPSN 2011
2007	Co-organizer, IPAM Workshop on Sensor Networks, Jan. 2007
2006	Panel, NSF workshop on Tsunami detection, Berkeley, Nov 17-18, 2006
2006	Panel, National Academies hearing of Committee on a New Government-University Partnership for Science and Security, Stanford CA, Sept 27, 2006.
2006	Testimony, House Science Committee hearing on technologies for border security, Washington DC, Sept 13, 2006
2005	Panel, "Getting the Context Right" Institute for the Future, Palo Alto, May 2005
2005	Guest Editor, IEEE J. Selected Areas in Comm, special issue on self-organizing distributed collaborative sensor networks, April 2005
2004	Panel, Federal Communication Commission hearing on RFID technology, Washington DC, Oct 7, 2004.
2004	Presentation to CA Senate subcommittee, on RFID technology, August 2004.
2003	NSF Research Day, Washington DC, June 5, 2003
2002-	External Review Committee, Swiss National Competence Center in Research on Mobile Information and Communication Systems
1998-06	Member technical staff, Sensoria Corp.
1999-00	JPL Mars Internet Committee
1999-00	UC Communications Research (CORE) Executive Committee Chair
1999	American Association of Universities DoD Research Day, Washington DC
1999	Proposer and Co-Chair, DARPA ISAT study, "Towards a Robotic Ecology"
1998	Proposer and task force member, CORE
1998	Member, DARPA ISAT study, "Simple Systems"
1998	German-American NAE Workshop on Frontiers in Engineering
1996	NSF workshop on priorities in communications research

Invited Talks/Short Courses

G.J. Pottie, "The Internet of Things: Predictions and Reality," University of Waterloo, May 8, 2018

G.J. Pottie, "The Internet of Things: Predictions and Reality," UC Riverside, Jan 8, 2018

G.J. Pottie, "Multi-level inference of human motions using wearable sensors," IEEE Ventura COMSOC chapter, Nov 11, 2014

G.J. Pottie, "Internet of things: History and prospects," Panel discussion, American Society of Engineers of Indian Origin annual conference, UC Irvine, September 27, 2014.

G.J. Pottie, "Multi-level inference of human motions using wearable sensors," UCSB ECE Dept., May 2014

G.J. Pottie, "mHealth and Big Data Analytics," UCLA/NIH mHealth Summer Institute, UCLA, August 2013.

G.J. Pottie, "Wireless Sensor Networks," UCLA Extension short course, Northrup, San Diego, March 2011.

G.J. Pottie, "Wireless health," University of Canterbury, Christchurch, New Zealand, May 10, 2010.

G.J. Pottie, "Cooperation in radio and sensor networks," University of Canterbury, Christchurch, New Zealand, May 6, 2010.

G.J. Pottie, "Cooperation in radio and sensor networks," University of Melbourne, Australia, Oct. 2009.

G.J. Pottie, "Cooperation in radio and sensor networks," University of Sydney, Australia, June 25, 2009.

G.J. Pottie, "Sensor network design principles," Keynote, WiComm 2008, Dalian, China, Oct. 13, 2008.

G.J. Pottie, "The marginal utility of cooperation in sensor networks," IPSN Signal Processing Workshop, St. Louis, April 21, 2008.

G.J. Pottie, "Design of trustworthy fielded sensor networks," Keynote, SPIE Sensors and C3I Technologies for Homeland Security and Defense, VII, Orlando, March 2008

G.J. Pottie, B. Daneshrad, M.B. Srivastava, M. Van der Schaar, X. Wang, "Fundamentals of Cognitive Radio," UCLA Extension Short Course, Los Angeles, November 2007; August 2008.

G.J. Pottie, "Sensor networks for environmental monitoring," Keynote, CNSR '07, Fredericton, New Brunswick, May 14-17, 2007.

G.J. Pottie, "An agenda for information theory research in sensor networks," IPAM Workshop on Sensor Networks, Los Angeles, Jan, 2007

G.J. Pottie, "Actuated Sensor Networks," Keynote speech, Basenets 2005, Boston, Oct. 2005.

G.J. Pottie, "Actuated Sensor Networks," Hamilton Institute, Maynooth Ireland, Sept. 2005.

G.J. Pottie, "Tagging the Physical World," FCC hearing on RFID technologies, Washington DC, Oct 7, 2004.

G.J. Pottie, W.J. Kaiser, G. Sukhatme, M. Batalin, A. Kansal, M. Rahimi, "Networks of Mobile Sensors," tutorial at SECON'04, Santa Clara, CA, Oct 4, 2004.

G.J. Pottie, "Sustainable Large-Scale Sensor Networks," Sir Mark Oliphant Conference on Converging Technologies for Agriculture and Environment, Melbourne, Australia, Aug 9-12, 2004.

G.J. Pottie, "CENS: Sustainable Large-Scale Sensor Networks," CSIS, Washington DC, May 18, 2004

G.J. Pottie, "Tagging the Physical World." NRC RFID Technologies Workshop, May 10-11, Seattle WA 2004

G.J. Pottie, W.J. Kaiser, G. Sukhatme, M. Batalin, A. Kansal, M. Rahimi, "Networks of Mobile Sensors," tutorial at ICRA'04, New Orleans, April 27, 2004.

K. Sohrabi, W.J. Kaiser, G.J. Pottie, W. Merrill, F. Newberg, "Wireless Sensor Networks," UCLA Extension Short Course (April '03, November '03, and remote offerings at Boeing and NASA Glenn)

Publications List

Publications in Professional and Scholarly Journals

A. Mahajan, G. Pottie, and W. Kaiser, "Transformation in Healthcare by Wearable Devices for Diagnostics and Guidance of Treatment," ACM Trans. Comput. Healthcare 1, 1, Article 2, February 2020.

M. Tadayon and G. J. Pottie, "Predicting Student Performance in an Educational Game Using a Hidden Markov Model," in *IEEE Transactions on Education*, Early Access Article, 2020.

H. Zhao, G. J. Pottie and B. Daneshrad, "Reciprocity Calibration of TDD MIMO Channel for Interference Alignment," in *IEEE Transactions on Wireless Communications*, vol. 19, no. 5, pp. 3505-3516, May 2020.

H. Zhao, L. Wei, M. Jarrahi and G. J. Pottie, "Extending Spatial and Temporal Characterization of Indoor Wireless Channels From 350 to 650 GHz," in *IEEE Transactions on Terahertz Science and Technology*, vol. 9, no. 3, pp. 243-252, May 2019.

Yi Jiang, Babak Daneshrad and Gregory J. Pottie, "A practical approach to joint timing, frequency synchronization and channel estimation for concurrent transmissions in a MANET," IEEE Trans. Wireless Comm., vol. 16, No. 6, June 2017, pp. 3461-3475.

Jie Xu, Linqi Song, James Y. Xu, Gregory J. Pottie and Mihaela van der Schaar, "Personalized active learning for activity classification using wireless wearable sensors," IEEE J. Selected Topics in Signal Processing, vol 10, no. 5, 2016, pp. 865-876.

James Y. Xu, Yan Wang, Mick Barrett, Bruce Dobkin, Greg J. Pottie and William J. Kaiser, "Personalized Multilayer Daily Life Profiling Through Context Enabled Activity Classification and Motion Reconstruction: An Integrated System Approach," IEEE J. of Biomedical and Health Informatics, Vol. 20, No. 1, pp. 177-188, Jan 2016.

J.Y. Xu, N.V. Ebken, Y. Wang, G.J. Pottie and W.J. Kaiser, "Integrated inertial sensors and mobile computing for real-time cycling performance and guidance via pedaling profile," IEEE J. of Biomedical and Health Informatics, Vo. 19, No. 2, pp. 440-445, March 2015.

J.Y. Xu, Hi.-I. Chang, C. Chien, W.J. Kaiser and G.J. Pottie, "Context-driven, prescription-based personal activity classification: Methodology, architecture, and end-to-end implementation," IEEE J. of Biomedical Health and Informatics, Vol. 18., No. 3, pp. 1015-1025, May 2014.

Y. Zhao and G.J. Pottie, "Optimal Spectrum Management in Multiuser Interference Channels," IEEE Trans. Inform. Theory, Vol. 59, No. 8, pp. 4961-4976, Aug. 2013.

J.Y. Xu, G. J. Pottie and W.J. Kaiser, "Enabling Large-Scale Ground-Truth Acquisition and System Evaluation in Wireless Health," IEEE Transactions on Biomedical Engineering, vol. 60, No. 1, Part 2, pp. 174 – 178, January 2013.

Y. Zhao, C.W. Tan, A.S. Avestimehr, S.N. Diggavi and G.J. Pottie, "On the maximum achievable sumrate with successive decoding in interference channels," IEEE Trans. Inform. Theory, vol. 58, No. 6, pp. 3798-3820, June 2012.

K. Ni and G.J. Pottie, "Sensor network data fault detection with maximum a-posteriori selection and Bayesian modeling," ACM Trans. Sensor Networks, vol. 8, No. 3, pp. 23:1-23:21, July 2012.

K. Ni, N. Ramanathan, M.N.H. Chehade, L. Balzano, S. Nair, S. Zahedi, E. Kohler, G. Pottie, M. Hansen, M. Srivastava, "Sensor network data fault types," ACM Trans. Sensor Networks, vol. 5, No. 3, May 2009.

H. Luo and G.J. Pottie, "Designing routes for source coding with explicit side information in sensor networks," IEEE/ACM Trans. Networking, vol. 15, No. 6, pp. 1401-1413, Dec. 2007

A. Kansal, W. Kaiser, G. Pottie, M. Srivastava and G. Sukhatme, "Reconfiguration methods for mobile sensor networks," ACM Trans. Sensor Networks, vol. 3, No. 4, pp. 22:1-22:28, Oct. 2007

T.-H. Lin, W.J. Kaiser and G.J. Pottie, "Integrated low-power communication system design for wireless sensor networks," IEEE Comm. Magazine, Vol. 42 No. 12, pp. 142-150, Dec. 2004.

G. Pottie, "Privacy in the global e-village," Comm. Of the ACM, vol. 47, No. 2, pp. 21-23, Feb. 2004

K. Shoarinejad, J.L. Speyer and G.J. Pottie, "Integrated predictive power control and dynamic channel assignment in mobile radio systems," IEEE Trans. Wireless Comm., vol. 2, pp. 976-988, Sept. 2003.

W. M. Merrill, H. N. Liu, J. Leong, K. Sohrabi, and G. J. Pottie, "Quantifying Short Range Surface-to-Surface Communication Links", IEEE Antennas and Propagation Magazine, September 2003.

Hong Chen, C.F. Lam CF, N.J. Frigo, G.J. Pottie, P.D. Magill, and M. Boroditsky. "A one-input two-output channel representation of single-mode fibers with PMD," Journal of Lightwave Technology, vol.21, no.3, March 2003, pp.743-49.

C.C. Wang and G.J. Pottie, "Variable bit allocation for FH-CDMA wireless communication systems," IEEE Trans. Comm., vol. 50, No. 6, Oct. 2002.

H. Chen and G.J. Pottie, "An orthogonal projection-based approach for PAR reduction in OFDM," IEEE Comm. Letters, vol. 6, No. 5, pp. 169-71, May 2002.

D. Connors, B. Ryu, G.J. Pottie and S. Dao, "A medium access control protocol for real time video over high latency satellite channels," Mobile Networks and Applications (Kluwer, ACM), vol. 7, No. 1, pp.9-20, 2002.

J. Kim and G.J. Pottie, "Unequal error protection TCM codes," IEE Proc. Commun., vol. 148, No. 5, pp. 265-72, Oct. 2001.

G.D. Kondylis, F. de Flaviis, G.J. Pottie, and T. Itoh, "A memory-efficient formulation of the finite-difference time-domain method for the solution of Maxwell equations," IEEE Trans. Microwave Theory and Techniques, vol. 49, No. 7, pp. 1310-20, July 2001.

G.J. Pottie, "Wireless integrated network sensors (WINS): The web gets physical," National Academy of Engineering: The Bridge, vol. 31, No. 4, pp. 22-27, Winter 2001.

Sohrabi, K, Gao, J., Ailawadhi, V, and Pottie, G., "Protocols for self-organization of a wireless sensor network," IEEE Personal Comm. Magazine, vol. 7, No. 5, pp. 16-27, Oct. 2000.

N. Bambos, S.C. Chen, and G.J. Pottie, "Channel access algorithms with active link protection for wireless communication networks with power control," IEEE/ACM Trans. on Networking, vol. 8, No. 5, pp. 583-597, Oct. 2000.

A.A. Abidi, G.J. Pottie, and W.J. Kaiser, "Power-conscious design of wireless circuits and systems," Proceedings of the IEEE, vol. 88, No. 10, pp. 1528-1455, Oct. 2000.

Pottie, G.J., and Kaiser, W.J., "Wireless Integrated Network Sensors," Comm. of the ACM, vol. 43 No. 5, pp. 51-58, May 2000.

A.R. Calderbank, G. Pottie, and N. Seshadri, "Cochannel interference suppression through time/space diversity," IEEE Trans. Inform. Theory, vol. 46, No. 3, pp. 922-32, May 2000.

Hansen, C.J., and Pottie, G.J., "A distributed access algorithm for cellular personal communication systems with channel partitioning," IEEE Trans. Vehic. Tech., vol. 48, No. 1, pp. 76-82, Jan. 1999.

Lee, H-N., Pottie, G.J. "Fast adaptive equalization/diversity combining for time-varying dispersive channels," IEEE Trans. Comm., vol. 46, No. 9, pp. 1146-1162, Sept. 1998.

Colburn, J.S., Rahmat-Samii, Y., Pottie, G.J. "Evaluation of personal communications dual antenna handset diversity performance," IEEE Trans. Vehic. Tech., vol. 47, No. 3, pp. 737-746, Aug. 1998

Tang, B. Shen, A., Alwan, A. and Pottie, G.J., "A perceptually-based embedded subband speech coder," IEEE Trans. Speech and Acoustics, vol. 5, No. 2, pp. 131-140, March 1997.

Kim, J., and Pottie, G.J. "On punctured trellis coded modulation," IEEE Trans. Inform. Theory, pp. 627-635, Mar. 1996.

Pottie, G.J., and Calderbank, A.R., "Channel coding strategies for cellular radio," IEEE Trans. Vehic. Tech., pp. 763-770, Nov. 1995.

Pottie, G.J., "System design choices for personal communications," IEEE Personal Comm. Magazine, pp. 50-67, Oct. 1995 (invited).

Pottie, G.J., and Eyuboglu, M.V., "Equal power coordinated transmission for HDSL," IEEE Trans. Comm., pp. 3080-3084, Dec. 1994.

Lin, V., and Pottie, G.J. "Channel coding for a frequency-hopped wireless transceiver," LNCS, vol. 793, Information Theory and Applications, Springer-Verlag, 1994.

Pottie, G.J. and Calderbank, A.R., "Further asymptotic upper bounds on the minimum distance of trellis codes," IEEE Trans. Inform. Theory, pp. 1428-1430, July 1993.

Calderbank, A.R. and Pottie, G.J., "Upper bounds for small trellis codes," IEEE Trans. Information Theory, pp. 1791-1795, Nov. 1992.

Pottie, G.J. "Trellis codes for the optical direct detection channel," IEEE Trans. Communications, pp. 1182-83, Aug. 1991.

Pottie, G.J. and Eyuboglu, M.V. "Combined coding and precoding for PAM and QAM HDSL Systems," IEEE Journal Selected Areas in Communications, pp. 861-870, Aug. 1991.

Pottie G.J. and Taylor, D.P. "A comparison of reduced complexity decoding algorithms for trellis codes," IEEE Journal Selected Areas in Communications, pp. 1369-1380, Dec. 1989.

Pottie G.J. and Taylor, D.P. "Multi-level codes based on partitioning," IEEE Trans. Information Theory, pp. 87-98, Jan. 1989.

Pottie G.J. and Taylor, D.P. "Sphere-packing upper bounds on the free distance of trellis codes" IEEE Trans. Information Theory, pp.435-447, May 1988.

Pottie G.J. and Taylor, D.P. "An approach to Ungerboeck coding for rectangular signal sets," IEEE Trans. Information Theory, pp. 285-289, March 1987.

Publications in Conference Proceedings

S. Bhat, J. Jiang, O. Pooladzandi and G. Pottie, "De-biasing Generative Models Using Counterfactual Methods," 2022 IEEE Information Theory and Applications Workshop, San Diego, CA, May 23-27, 2022.

H. Saggar, B. Daneshrad and G. J. Pottie, "The Distribution of SINR and the Achieved Throughput in Interference Alignment Under a Gauss Markov Channel," 2018 IEEE 88th Vehicular Technology Conference (VTC-Fall), Chicago, IL, USA, 2018, pp. 1-5.

H. Zhao, L. Wei, M. Jarrahi and G. Pottie, "Propagation Measurements for Indoor Wireless Communications at 350/650 GHz," 2018 43rd International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz), Nagoya, 2018, pp. 1-2.

E. Keramat, N. Kauffroath, K. Karbasi, H. Zhao, B. Daneshrad and G. Pottie, "Experimental results for low overhead frequency offset estimation in MANETs with concurrent transmission," to appear, IEEE Milcomm 2017, Baltimore, Oct. 2017.

Xiaoxu Wu, Xiaoyu Xu, Yan Wang, William Kaiser and Gregory Pottie, "A double-layer automatic orientation correction method for human activity recognition," IEEE 13th Int'l Conf on Wearable and Implantable Body Sensor Networks (BSN), San Francisco, June 2016, pp. 365-370

H. Saggar and G. Pottie, "On maximizing the average capacity with interference alignment in a time varying channel," IEEE Workshop on Information Theory and Applications, San Diego, Feb 2016, pp. 1-5

Y. Jiang, B. Daneshrad, and G. Pottie, "Initial acquisition for MANET with simultaneous transmissions," Proc. IEEE Milcom 2015, Tampa, October 2015, pp. 1158-1163.

H. Saggar, Y. Jiang, B. Daneshrad, and G. Pottie, "A concurrent CSMA MAC protocol for mobile ad hoc networks using beamnulling," Proc. IEEE Milcom 2015, Tampa, October 2015, pp. 97-102.

H-I Chang, V. Desai, O. Santana, M. Dempsey, A. Su, J. Goodlad, F. Aghazadeh, and G.J. Pottie, "Opportunistic Calibration of Sensor Orientation Using the Kinect and IMU Sensor Fusion," ACM Wireless Health 2015, Bethesda MD, October 2015.

X. Wu, Y. Wang, and G. Pottie, "A robust step length estimation system for human gaits using motion sensors," ACM Wireless Health 2015, Bethesda MD, October 2015.

J. Xu, J.Y. Xu, L. Song, G.J. Pottie and M. van der Schaar, "Context-driven active learning for wireless health," Proc. IEEE Globecom 2014, Austin, Dec 2014, pp. 2423-2428.

Y. Wang, J. Xu, X. Wu, G. Pottie and W. Kaiser, "A simple calibration for upper limb motion tracking and reconstruction," IEEE EMBC 2014, Chicago, Aug. 2014, pp. 5868-5871.

X. Wu, Y. Wang and G. Pottie, "A non-ZUPT gait reconstruction method for ankle sensors," IEEE EMBC 2014, Chicago, Aug. 2014, pp. 5884-5887.

W. Li and G.J. Pottie, "Fair resource allocation for OFDMA multi-cell networks," IEEE Workshop on Information Theory and Applications, San Diego, Feb 2014.

H.-I. Chang, C.-H. Huang, Y. Wang, L. Dolecek and G. Pottie, "Virtual inertial measurements for motion inference in wireless health," Proc. 2013 Asilomar Conf. on Signals, Systems and Computers, Pacific Grove CA, Nov. 3-6, 2013, pp. 966-969.

Y. Wang, C. Chien, J. Xu, G. Pottie and W. Kaiser, "Gait analysis using 3D motion reconstruction with an activity-specific tracking protocol," Proc. 2013 IEEE ICASSP, Vancouver Canada, May, May 26-31, 2013.

C. Chien, J. Xia, O. Santana, Y. Wang, and G. Pottie, "Non-linear Complementary Filter Based Upper Limb Motion Tracking Using Wearable Sensors," Proc. 2013 IEEE ICASSP, Vancouver Canada, May, May 26-31, 2013.

X. Wu, Y. Wang, C. Chien, G. Pottie, "Self-Calibration of sensor misplacement based on motion signatures", Proc. 2013 IEEE International Conference on Body Sensor Networks, Cambridge MA, May 6-9, 2013.

H-I Chang, C. Chien, J.Y. Xu, G. J. Pottie, "Context-guided universal hybrid decision tree for activity classification," Proc. 2013 IEEE International Conference on Body Sensor Networks, Cambridge MA, May 6-9, 2013.

C.C. Chien, J.Y. Xu, H-I Chang, X. Wu and G. J. Pottie, "Model construction for human motion classification using inertial sensors," IEEE Workshop on Information Theory and Applications, San Diego, Feb 2013.

C. Chien and G. Pottie, "A universal hybrid decision tree classifier for human activity classification," Proc. 34th Int'l IEEE Engineering in Medicine and Biology Society Conf., San Diego, Aug 28-Sept 1, 2012.

A. Friedman, N. Hajj Chehade, C. Chien and G. Pottie, "Estimation of accelerometer orientation for activity recognition," Proc. 34th Int'l IEEE Engineering in Medicine and Biology Society Conf., San Diego, Aug 28-Sept 1, 2012.

N. Hajj Chehade, A.P. Ozisik, J. Gomez, F. Ramos and G. Pottie, "Detecting stumbles with a single accelerometer," Proc. 34th Int'l IEEE Engineering in Medicine and Biology Society Conf., San Diego, Aug 28-Sept 1, 2012.

B. Fish, A. Khan, N.H. Chehade, C. Chien, G. Pottie, "Feature selection based on mutual information for human activity recognition," Proc. 2012 IEEE ICASSP, Kyoto, March 25-30, 2012.

D. Bandari and G.J. Pottie, "ICon: Interference Concentration for Uplink in MultiCell OFDMA Networks" Proc. 2011 IEEE WiMob, Shanghai, China, Oct. 10-12, 2011.

J.Y. Xu, Y. Sun, Z. Wang, W.J. Kaiser and G.J. Pottie, "Context guided and personalized activity classification system," Proc. 2011 IEEE Wireless Health, San Diego, CA, Oct 10-13, 2011 (best paper award).

Y. Zhao, C.W. Tan, A.S. Avestimehr, S.N. Diggavi, and G.J. Pottie. "On the sum-capacity with successive decoding in interference channels," Proceedings of IEEE International Symposium on Information Theory, St. Petersberg, Russia, July 2011

Y. Zhao and G.J. Pottie, "Interference strength alignment and channel allocation in linear cellular networks," 2011 IEEE ICC, Kyoto, Japan, June 5-9, 2011.

N. Ruchansky, C. Lochner, E. Do, T. Rawls, N. Hajj Chehade, J. Chien, G. Pottie, and W. Kaiser, "Monitoring workspace activities using accelerometers," 2011 IEEE ICASSP, Prague, Czech Republic, May 22-27 2011, pp. 1837-39.

D. Bandari, P. Frossard, G. Pottie, "An adaptive cross-layer resource allocation scheme for correlated wireless video sources," 2011 IEEE WCNC, Cancun, Mexico, March 28-31, 2011, pp. 2065-2072.

G.J. Pottie, "Fair resource allocation in one-dimensional cellular systems," 2011 Inform. Theory and Applications Workshop, San Diego, CA, Feb 6-11 2011.

Y. Zhao and G.J. Pottie, "Optimization of power and channel allocation using the deterministic channel model," 2010 Inform. Theory and Applications Workshop, San Diego, CA, Jan 31-Feb 5 2010.

Y. Zhao and G.J. Pottie, "Optimal spectrum management in multi-user interference channels," 2009 IEEE Intl. Symp. On Inform. Theory, Seoul, Korea, June 28-July 3, 2009, pp. 2266-2270.

Y. Zhao and G.J. Pottie, "Optimal spectrum management in two-user symmetric interference channels," 2009 Inform. Theory and Applications Workshop, San Diego, CA Feb. 9-13, 2009, pp. 256-63.

G.J. Pottie, "Design of trustworthy fielded sensor networks," Keynote, SPIE Sensors and C3I Technologies for Homeland Security and Defense, VII, Orlando, March 2008, Proc. SPIE 6943, pp. 69430U 1-9.

A. Pandya, A. Kansal, and G. Pottie, "Goodput and delay in networks with controlled mobility," IEEE Aerosense Conf., March 2008, pp. 1-8.

W. Hu, M. Gerla, G.A. Vlantis and G.J. Pottie, "Efficient, flexible, and scalable inter-network spectrum sharing and communications in cognitive IEEE 802.22 networks," 1st Int'l Workshop on Cognitive Radio and Advanced Spectrum Management, (CogART), Feb. 2008, pp. 1-5.

Y.-C. Tong and G.J. Pottie, "The marginal utility of cooperation in sensor networks," 2008 IEEE Inform. Theory and Applications Workshop, San Diego, CA, Jan 27 –Feb 1, 2008, pp. 256-262.

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Johnson, B., Kim, J., Pottie, G. "Channel code simulation using VANDA," UCLA research progress report for Sarnoff Laboratory.

Contributions to Standards

Pottie, G.J. "Shaping for single-pair HDSL", T1E1.4/96-066, presented April 1996.

Pottie G.J., "Transmission Impairments for asymmetric digital subscriber lines," T1E1.4/91-035, presented February, 1991.

Pottie G.J. and Eyuboglu, M.V., "Finite-length decision feedback equalizers for HDSL," T1E1.4/90-225, presented Dec. 1990.

Brown, L., Eyuboglu, M.V., and Pottie, G.J., "Performance of combined coding-precoding in the presence of channel variations," T1E1.4/90-085, presented June 1990.

Pottie, G.J., "Comparison of baseband vs. passband systems for HDSL," T1E1.4/90-164, presented September, 1990.

Accepted for Publication

J.Y. Xu, X. Nan, V. Ebken, Y. Wang, G.J. Pottie, and W.J. Kaiser, "Integrated inertial sensors and mobile computing for real-time cycling performance guidance via pedaling profile classification," to appear, IEEE Journal of Biomedical and Health Informatics.

J. Xu, L. Song, M. Van der Schaar, J.Y. Xu and G.J. Pottie, "Context-driven online learning for activity classification in wireless health," IEEE Globecom, Austin, Dec 8-12, 2014.

X. Wu, Y. Wang, G. Pottie, "A non-ZUPT gait reconstruction method for ankle sensors," 36th Annual International IEEE EMBS Conference, Chicago, Aug 26-30, 2014.

Y. Wang, J. Xu, X. Wu, G. Pottie, and W. Kaiser, "A simple calibration for upper limb motion tracking and reconstruction," 36th Annual International IEEE EMBS Conference, Chicago, Aug 26-30, 2014.

Research Support

Current

2020-23	G. Pottie and A. Alwan, "REU Site: Interactive Systems." (NSF) Undergraduate summer research ($364K)
2018-21	G. Pottie, "Scalable Hands-On Engineering Experiences in Community Colleges." (ONR) Course and bridge program development. ($749K).

Past

2016-19	G. Pottie, A. Alwan, W. Kaiser, M. Sarrafzadeh, M. Srivastava, "REU Site: Wireless health and education." (NSF) Undergraduate summer research ($360K).
2017-19	E. Baker and G. Pottie, "Research for Innovative Technology: The Navy Life Game" (ONR) Creation of workforce aptitude games, ($912K)
2017-20	M. Jarrahi and G. Pottie, "Enhancing Spectral Access through Adaptive Terahertz Communication Systems" (NSF) THz propagation and signaling. ($479K)
2013-16	G. Pottie, A. Alwan, W. Kaiser, M. Sarrafzadeh, M. Srivastava, "REU Site: Wireless health and education." (NSF) Undergraduate summer research ($384K).
2012-14	J. Xu and Y. Wang; advisors G. Pottie, B. Dobkin, and W. Kaiser "Multi-Context Driven Activity Classification through Three-dimensional Body Motion via Wearable Sensors," (Qualcomm Innovation Fellowship). Competitive fellowship. ($100K)
2012-13	L. Dolecek, D. Cabric, G. Pottie and M. Srivastava, "Reliable inference with missing, masked, malfunctioning or malicious sensors." (IARPA) Development of Bayesian framework for applications spanning cognitive radio, wireless health and utility monitoring. ($1M)
2012	W. Kaiser and G. Pottie, "Medical technology and communication" (Broadcom Foundation) Support for undergraduate summer research ($25K).
2002-12	D. Estrin et al, "Center for embedded network systems (CENS)." (NSF) Science and technology center for the investigation of embedded sensor networks. Large-scale measurement projects will generate fundamental scientific results, contribute to science education outreach, and lead to new sensor network designs. I served as deputy director. ($40M)
2009-12	G. Pottie and W. Kaiser, "Sensor networks for personalized healthcare." (NSF; supplement to CENS contract) Inference from accelerometers worn on the person; application to undergraduate education. ($500K).
2009-13	S. Kumar et al, "NetSE: Large: Collaborative Research: FieldStream: Network Data Services for Exposure Biology Studies in Natural Environments." (NSF) Multi-university project for study of stress response, with subjects using wearable sensors. My component is inferences on body motions and study of energy issues (my share of UCLA subcontract roughly $80K per year).
2010	Erskine Fellow. (University of Canterbury). Airfare and stipend for visit to University ($6K)
2009	Fulbright Senior Scholar (US Dept. of State). Airfare and stipend for visit to University of Sydney ($18K)
2009	International Visiting Research Fellowship (University of Sydney). ($16K)
2008-09	G. Pottie (P.I.), M. Van der Schaar, "Robust and adaptive support for in-home wireless multimedia applications," (UC MICRO, Broadcom). Investigation of robust multiple access in heterogeneous interference environments ($58.5K)
2005-08	M. Srivastava (P.I.), M. Hansen, S. Lu, and G. Pottie, "Algorithms and system support for data integrity in wireless sensor networks," (NSF). Study of how to ensure the reliability of the data and data models used in sensor networks, including calibration issues. ($400K)
2003-08	W. Kaiser (P.I.) et al., "Networked Info-mechanical Systems," (NSF). Large ITR for investigation of effects of constrained mobility on sensor networks, in support of ecological and public health science projects. ($7.5M)

2002-06	G. Pottie, "Fundamental limits in wireless sensor networks," (NSF). Investigation of basic information theoretic limits in wireless sensor networks.
2002-05	W. Kaiser (P.I.), M. Fitz and G. Pottie, "Energy-aware articulation in sensor networks" (NSF). Study of energy/information trades when sensor nodes have articulating limbs for sensor, antenna, and energy supply motion.
2001-03	J. Speyer (P.I.), G. Carmen and G. Pottie, "Sensor array networks for structural integrity" (AFOSR) Use of distributed wireless networks for detection of damage in metal structures
2001-03	J. Shamma (P.I.) et al, "Cooperative control of distributed autonomous vehicles in adversarial environments," (AFOSR). MURI involving UCLA, Caltech, and MIT for problems in coordination of groups of UAVs, including communications/controls interactions.
2000-04	M. Gerla (P.I.), R. Bagrodia, B. Daneshrad, G. Pottie, I. Rubin, M. Srivastava, J. Villasenor, "Minuteman" (ONR). Design of complete communications stack from radio through to networking to transport of compressed video for mobile aerial and ground vehicles, interacting with fixed ground terminals.
2000-01	G. Pottie, "Fundamental limits in cooperative sensor networks," (HRL/UC MICRO) Information theoretic bounds on efficiency of cooperative detection algorithms
1999-02	G. Pottie, "Cooperative communications for remote exploration," (JPL). Synchronized communication from low-power nodes to satellites.
1998-99	G.J. Pottie (P.I.), B. Daneshrad, B. Dunn, W. Kaiser "Integrated airport security system," (FAA). Proof of concept for integration of sensors and networks for improved inspection of passengers, baggage, and cargo, and improved security in limited-access zones.
1997-99	G.J. Pottie (P.I.) et al., "AWAIRS: Adaptive Wireless Arrays for Interactive Reconnaissance, surveillance and tartet acquisistion in Small unit operations" (DARPA). Networking of microsensor nodes which include signal processing and communications to cooperatively detect objects and communicate; development of architecture scalable to thousands of nodes.
1995-99	W.J. Kaiser, K. Bult, K.S.J. Pister, G.J. Pottie, O. Stafsudd, H. Marcy, "Low power wireless integrated microsensors (LWIM)" (DARPA). The purpose is to integrate sensing, signal processing, and wireless communications on the same chip to enable low-cost sensor networks. This includes study of how to make reliable decisions in the network with the least total power consumption among the sensors, signal processing and communications; collaborative program with Rockwell Science Center.
1996-99	G.J. Pottie, "Wireless home distribution of multimedia services," (Pair-Gain, UC MICRO). Study of methods to distribute mix of low and high-bandwidth services in a residence, with minimal re-cabling.
1996-97	G.J. Pottie, "Wireless Digital Communication Systems and Sensor Networks," (Okawa Foundation).
1994-97	H. Samueli, A.A. Abidi, G.J. Pottie, and Y. Rahmat-Samii, "Hardware technologies for adaptive high bit-rate wireless transceivers" (DARPA). The objective is to produce a wireless transceiver capable of data rates between 64 kb/s to 64 Mb/s, with a realization suitable for notebook computer applications. The system will incorporate an adaptive antenna array, line probing, adaptive equalization, power

control, channel assignment, and bit allocation, variable data rate, M-QAM modulation with coherent reception, and slow frequency hopping.

1993-96   G.J. Pottie, "Dynamic power and channel allocation in cellular radio" (Motorola). University Partners in Research grant for student to investigate problem of allocation of power and channels in radio systems to maximize system capacity, with realizable, distributed algorithms.

1994-96   G.J. Pottie, "Adaptive signaling for multi-user communication systems" (Pair-Gain, UC Micro). Contract to study how to maximize number of users in crosstalk-limited system, with distributed algorithms, exploiting similarities of this problem to multi-access radio systems.

1994-96   G.J. Pottie, "Trellis coding for video applications" (UC MICRO, with Sarnoff). Design of channel coder/decoder techniques suitable for high-speed broadcast video applications.

1993-95   R. Jain and G.J. Pottie, "Techniques for Forward Error Correction Circuits for HDTV Transmission" (Sarnoff, UC MICRO). Design of RS codec, investigation of alternative coding structures for HDTV.

1992-95   H. Samueli, A. Abidi, G.J. Pottie, and Y. Rahmat-Samii, "Hardware technologies for robust personal communication transceivers" (ARPA). The purpose of the project is to design and build a low-power wireless transceiver using CMOS technology, capable of reliable communications up to 160 kb/s. The design includes dual antennas, frequency hopping and channel coding to achieve a high diversity order.