Professor Fabio Tozeto Ramos

Contact information

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Research Interests

Machine learning, robotics, Bayesian statistics, data fusion, healthcare.

Education

- Doctor of Philosophy, May 2008.
  Australian Centre for Field Robotics, The University of Sydney, Australia.
  Title: Recognising, Representing and Mapping Natural Features in Unstructured Environments.
  Supervisor: Hugh F. Durrant-Whyte
- Master of Science, June 2003.
  Polytechnique School, University of Sao Paulo, Brazil.
  Title: Anytime, Anyspace Probabilistic Inference.
  Supervisor: Fabio G. Cozman
- Bachelor of Science, December 2000.
  Polytechnique School, University of Sao Paulo, Brazil.
  Title: Bayesian Network Implementation in Embedded Systems.
  Supervisor: Fabio G. Cozman

Positions

- Professor in robotics and machine learning, School of Computer Science, University of Sydney. January 2019 to present.
- Visiting Professor at NVIDIA Research in Seattle, WA. August 2018 to present.
- co-Director, Centre for Translational Data Science, University of Sydney. April 2017 to present.
- Associate Professor in robotics and machine learning, School of Information Technologies, University of Sydney. January 2015 to present.
- Senior Lecturer in machine learning, School of Information Technologies, University of Sydney. January 2011 to 2015.
- ARC Research Fellow (APD) Australian Centre for Field Robotics, University of Sydney, Australia. February 2007 to January 2011.
- PhD Candidate Australian Centre for Field Robotics, University of Sydney, Australia. August 2003 to February 2007.
- Master of Science Candidate University of Sao Paulo, Brazil. Funded by HP Labs Palo Alto, USA, January 2002 to June 2003.
- Product Manager Siemens Brazil, Automation and Drives Division, January 2000 to December 2000.
- Research Student Mechatronics Engineering Department, University of Sao Paulo, January 1998 to January 2000.

Awards and Honours

- European Conference on Machine Learning (ECML), 2018, Best Student Paper Award, 2018.
- Supervisor of the Year, 2017. Sydney University Postgraduate Representative Association (SUPRA).
- Robotics Science and Systems (RSS), Best Paper Award Finalist, 2017.
- Dean's Research Award 2012.
- Google Publication Prize 2012.
- Google Publication Prize 2011.
- Australasian Conference on Robotics and Automation (ACRA), Best Paper Award, 2007.
- International Conference on Intelligent Robots and Systems (IROS), Best Paper Award, August 2005.
- University of Sao Paulo, Polytechnique School award for outstanding contributions to the school, 2003.

Grants and Fellowships

- *From big data to big decisions*
  Sydney Research Accelerator (SOAR) Fellowship 2017.
- *Inferring driver behaviours, intent and risk in complex traffic scenarios*
  ARC Discovery Project, 2016 – 2018.
- *Smart glasses: activity recognition for cognitive aid*
  ARC Linkage Project, 2016 – 2018.
- *Facility for experimental human-robot interaction research*
  ARC LIEF 2015.
- *Probabilistic graphical models for detecting outbreaks*
  ARC Discovery Project, April 2013 – April 2016.
- *Data fusion and active sensing for environment monitoring*
  ARC Discovery Early Career Award (DECRA), March 2012 – March 2015.
- *Data fusion and machine learning for geothermal target exploration and characterisation*, Australian Centre for Renewable Energy (ACRE), March 2012 – March 2014. (A$2m)
- *Learning from uncertain and missing labelling in relational data*
  ARC Australian Postdoctoral Fellowship (APD), March 2009 – March 2011.
- Rio Tinto Centre for Mining Automation in partnership with Hugh Durrant-Whyte and Peter Hatherly, 2007 (A$21m grant for 5 years).
- The University of Sydney, Research Fellowship in Field Robotics, August 2003 – February 2007.
- HP Labs, Palo Alto, Research Fellowship on Probabilistic Reasoning, December 2001 – June 2003.
- CAPES PET Research Fellowship, Programa Especial de Treinamento (Special Training Program), January 1997 – December 2000.

Professional Activities

Editorial Board

- Senior PC Member, International Joint Conference on Artificial Intelligence, 2017 – 2018
- Area Chair, Robotics Science and Systems, 2013 – 2014.
- Local Organiser, Robotics Science and Systems, 2012.
- IEEE International Conference on Information Processing in Sensor Networks (IPSN), 2011.
- Associate Editor, IEEE International Conference on Robotics and Automation (ICRA), 2006 to present.
- Associate Editor, IEEE/RSJ International Conference on Intelligent Robots (IROS), 2010 to present.
- Publication Chair, Robotics Science and Systems, 2008.

Program Committee (Summary)

- Neural Information Processing Systems, 2016 – 17.
- International Conference on Machine Learning, 2014, 2016.

- Australian Joint Conference on Artificial Intelligence, 2012.
- Association for the Advancement of Artificial Intelligence (AAAI), 2008.
- Uncertainty on Artificial Intelligence (UAI), 2011.
- IEEE Transactions on Robotics, 2006 to present.
- Journal of Robotics and Autonomous Systems, 2005 to present.
- Journal of Field Robotics, 2007 to present.
- International Journal of Robotics Research, 2008 to present.
- Robotics Science and Systems Conference, 2007 to present.
- IEEE International Conference on Robotics and Automation, 2006 to present.
- IEEE/RSJ International Conference on Intelligent Robots, 2006 to present.
- International Joint Conference on Artificial Intelligence (IJCAI), 2009, 2011, 2013.

Patents

- APPA 2008901043, Method and System For Exploiting Information From Heterogeneous Sources
- APPA 2009900054, A Method and System of Data Modelling
- APPA 2009902150, A Method and System for Data Analysis and Synthesis
- APPA 2008904884, A Method of Establishing and Maintaining a Model of Terrain Data
- APPA 2009904466, A method and system for multiple dataset Gaussian process modeling
- APPA 2009901935, Integrated Automation System With Picture Compilation System
- APPA 2009902773, A method of Characterising a Resource

Supervision

Current PhD students

- Thushan Vidudhaka Ganegedara
  Reinforcement learning for adapting deep network structures
- Ransalu Senanayake
  Spatial-temporal continuous occupancy mapping
- Rafael dos Santos de Oliveira
  Bayesian path optimisation in partial observable environments
- Philippe Morere
  Continuous state-action reinforcement learning with sparse rewards
- Tom Blau
  Bayesian deep learning for mobile manipulation
- Sheila Caceres
  Energy-aware egocentric activity recognition
- Yuan-Shuo Kelvin Hsu
  Kernel embeddings for approximate Bayesian inference
- Harrison Tri Tue Nguyen
  Multi-modal fusion of brain images
- Matthew Ma
  Implicit model predictive control with Bayesian approximate inference
- Louis Tiao
  Adversarial learning as approximate Bayesian inference
- Rafael Carvalhaes Possas
  Learning simulators for mobile manipulation
- Anthony Tompkins (Masters student)
  Kernel decompositions for time series data

Alumni

- Gilad Francis (PhD)
  Autonomous Exploration over Continuous Domains
- Charika de Alvis (PhD)
  Multi-Modal Learning For Adaptive Scene Understanding
- Carlos Vido (Masters)
  Multi-support Gaussian processes for continuous occupancy mapping
- Lionel Ott (PhD)
  Unsupervised Learning for Long-Term Autonomy
- Roman Marchant (PhD)
  Bayesian Optimisation for Planning in Dynamic Environments
- Kai Zhan (PhD)
  First-Person Activity Recognition
- Lachlan McCalman (PhD)
  Function Embeddings for Multi-modal Bayesian Inference
- Sachinthaka Abeywardana (PhD)
  Variational inference in generalised hyperbolic and Von Mises-Fisher distributions
- Vitor Guizilini (PhD)
  Non-Parametric Learning for Monocular Visual Odometry
- Bertrand Douillard (PhD)
  Vision and Laser Based Classification in Urban Environments
- Alistair Reid (PhD)
  Gaussian Process Models for Analysis of Remotely Sensed Geo-Spatial Data
- Joop van de Ven (PhD)
  Efficient probabilistic inference for mobile robot localisation
- Simon O'Callaghan (PhD)
  Continuous Occupancy Maps for the Representation of Unstructured Environments
- Francisco Zubizarreta (Masters)
  Active Bayesian Learning of Dynamic Systems
- Markus Schneider (Masters)
  Multi-Task Copula Processes

Peer-Review Publications

Books

1. O. Brock, J. Trinkle, **F.T. Ramos**, editors. Proceedings of Robotics Science and Systems IV, 2009. MIT Press.
2. **F.T. Ramos** Recognising, representing and mapping natural features in unstructured environments, 2009. VDM-Verlag.

Book Chapters

3. L. Ott, **F.T. Ramos**. Real-Time Clustering for Long-Term Autonomy. In *The 13th International Symposium on Experimental Robotics (ISER)*, Springer Tracts in Advanced Robotics (STAR), Springer-Verlag, 2012.
4. M. Bryson, A. Reid, C. Hung, **F.T. Ramos**, S. Sukkarieh. Cost-Effective Mapping using Unmanned Aerial Vehicles in Ecology Monitoring Applications. *The 12th International Symposium on Experimental Robotics (ISER)*, Springer Tracts in Advanced Robotics (STAR), Springer-Verlag, 2010.

5. V. Guizilini, **F.T. Ramos**. Multi-Task Learning for Outdoor Visual Odometry. *The 12th International Symposium on Experimental Robotics (ISER)*, Springer Tracts in Advanced Robotics (STAR), Springer-Verlag, 2010.
6. **F.T. Ramos**, W. Kadous, D. Fox. Learning to associate image features with CRF-Matching. *The 11th International Symposium on Experimental Robotics (ISER)*, Springer Tracts in Advanced Robotics (STAR). , Springer-Verlag, 2009.
7. B. Douillard, D. Fox, **F.T. Ramos**. A spatio-temporal probabilistic model for multi-sensor multi-class object recognition. *The 13th International Symposium of Robotics Research (ISRR)*, In Press, 2010.
8. **F.T. Ramos**, J. Nieto, H. Durrant-Whyte. Combining object recognition and SLAM for extended map representations. *The 10th International Symposium of Experimental Robotics(ISER 2006)*, Springer Tracts in Advanced Robotics (STAR), Springer-Verlag, 2006.
9. B. Upcroft, M.F. Ridley, L. Ong, B. Douillard, T. Kaupp, S. Kumar, T. Bailey, **F.T. Ramos**, A. Makarenko, A. Brooks, S. Sukkarieh, H. Durrant-Whyte. Multi-level state estimation in an outdoor decentralised sensor network. *The 10th International Symposium of Experimental Robotics(ISER 2006)*, Springer Tracts in Advanced Robotics (STAR), Springer-Verlag, 2006.

Journal Articles

10. K. Vivaldini, T. Martinelli, V. Guizilini, J.R. Souza, M. Oliveira, **F.T. Ramos**, D. Wolf. UAV Route Planning for Active Disease Classification. In *Autonomous Robots*, 2018.
11. V. Guizilini, **F.T. Ramos**. Learning to Reconstruct 3D Structures for Occupancy Mapping from Depth and Color Information. In *International Journal of Robotics Research*, 2018.
12. V. Guizilini, **F.T. Ramos**. Towards Real-Time 3D Continuous Occupancy Mapping using Hilbert Maps. In *International Journal of Robotics Research*, 2018.
13. A. Hata, **F.T. Ramos**, D. Wolf. Monte Carlo Localization on Gaussian Process Occupancy Maps for Urban Environments. In *IEEE Transactions on Intelligent Transportation Systems (ITS)*, vol. PP, no. 99, pp 1–10, 2017.
14. **F.T. Ramos**, L. Ott, Hilbert maps: scalable continuous occupancy mapping with stochastic gradient descent. In *International Journal of Robotics Research*, vol. 35, no 14, 2016.
15. M. Schneider, W. Ertel, **F.T. Ramos**. Expected Similarity Estimation for Large-Scale Batch and Streaming Anomaly Detection. *Machine Learning*, pp. 1–29, 2016.
16. V. Guizilini, **F.T. Ramos**. Online Self-Supervised Learning for Dynamic Object Segmentation. *International Journal of Robotics Research*, vol. 34, no. 4–5, pp. 559–581, 2015.
17. K. Zhan, S. Faux, **F.T. Ramos**. Multi-scale Conditional Random Fields for First-Person Activity Recognition on Elder and Patient Assistance. *Pervasive and Mobile Computing*, vol. 16, Part B, pp. 251–267, 2015.
18. L. Ott, **F.T. Ramos**. Unsupervised Online Learning for Long-Term Autonomy. *International Journal of Robotics Research*, vol. 32, no. 14, pp 1724–1741, 2013.
19. V. Guizilini, **F.T. Ramos**. Semi-Parametric Learning for Visual Odometry. *International Journal of Robotics Research*, vol. 32, no. 5, pp 526–546, 2013.
20. S. O' Callaghan, **F.T. Ramos**. Gaussian process occupancy maps. *International Journal of Robotics Research*, vol. 31, no. 1, pp 42–62, 2012.
21. Z. Suna, J. van de Ven, **F.T. Ramos**, X.Maoc, H.Durrant-Whyte. Inferring Laser Scan Matching Uncertainty with Conditional Random Fields. *Journal of Robotics and Autonomous Systems*, vol. 60, no. 1, pp. 83–94, 2012.
22. **F.T. Ramos**, B. Upcroft, S. Kumar, H. Durrant-Whyte. A Bayesian approach for place recognition. *Journal of Robotics and Autonomous Systems*, vol. 60, no. 4, pp 487–497, 2012.
23. K. Granstrom, T. Schon, J. Nieto, **F.T. Ramos**. Learning to close loops from range data. *International Journal of Robotics Research*, vol. 30, no 14, pp 1728–1754, 2011.

24. D. Douillard, D. Fox, **F.T. Ramos**, H. Durrant-Whyte. Classification and semantic mapping of urban environments, *International Journal of Robotics Research*, vol. 30, no. 1, pp. 5–32, 2011.
25. S. Vasudevan, **F.T. Ramos**, E. Nettleton, H. Durrant-Whyte. A mine on its own, *IEEE Robotics and Automation Magazine*, vol. 17, no. 2, pp. 63–73, 2010.
26. M. Bryson, A. Reid, **F.T. Ramos**, S. Sukkarieh. Airborne Vision-based mapping and classification of large farmland environments. *Journal of Field Robotics*, vol. 27, no. 5, pp. 632–655, 2010.
27. A. Kadkhodaie-Ilkhchi, S. Monteiro, **F.T. Ramos**, P. Hatherly. Rock recognition from MWD data: A comparative study of boosting, neural networks and fuzzy logic. *IEEE Geoscience and Remote Sensing Letters*, vol. 7, no. 4, pp 680–684, 2010.
28. S. Vasudevan, **F.T. Ramos**, E. Nettleton, H. Durrant-Whyte. Gaussian process modeling of large-scale terrain. *Journal of Field Robotics*, vol 26, no. 10, pp. 812–840, 2009.
29. **F.T. Ramos**, S. Kumar, B. Upcroft, H. Durrant-Whyte. A natural feature representation for unstructured environments. *IEEE Transactions on Robotics*, vol. 24, no. 6, pp. 1329–1340, 2008.
30. **F.T. Ramos**, B. Dickson, S. Kumar. Denoising aerial Gamma-ray surveying through non-linear dimensionality reduction. *Journal of Field Robotics*, vol. 24, no. 6, pp. 849–861, 2007.
31. T. Kaupp, B. Douillard, **F. T. Ramos**, A. Makarenko, B. Upcroft. Shared environment representation for a human-robot team performing information fusion. *Journal of Field Robotics*, vol. 24, no. 11–12, pp. 911-942, 2007.
32. **F.T. Ramos**, F.G. Cozman. Anytime anyspace probabilistic inference. *International Journal of Approximate Reasoning*, vol. 38, no. 1, pp. 53-80, 2005.

Peer-reviewed conference papers

33. R. Oliveira, L. Ott, **F.T. Ramos**. Bayesian optimisation under uncertain inputs. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.
34. K. Hsu, **F.T. Ramos**. Bayesian Learning of Conditional Kernel Mean Embeddings for Automatic Likelihood-Free Inference. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.
35. A. Tompkins, R. Senanayake, P. Morere, **F.T. Ramos**. Black Box Quantiles for Kernel Learning. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.
36. A. Dezfouli, R. Morris, **F.T. Ramos**, P. Dayan, B.W. Balleine. Integrated accounts of behavioral and neuroimaging data using flexible recurrent neural network models. In *Neural Information Processing Systems (NeurIPS)*, 2018. **Oral talk.**
37. K. Hsu, R. Nock, **F.T. Ramos**. Hyperparameter Learning for Conditional Mean Embeddings with Rademacher Complexity Bounds. In *European Conference on Machine Learning (ECML)*, 2018. **Best Student Paper Award.**
38. P. Morere, **F.T. Ramos**. Bayesian RL for Goal-Only Rewards. In *Conference on Robotics Learning (CoRL)*, 2018.
39. V. Guizilini, **F.T. Ramos**. Unpaired Learning of Dense Visual Depth Estimators for Urban Environments. In *Conference on Robotics Learning (CoRL)*, 2018.
40. V. Guizilini, **F.T. Ramos**. Fast 3D Modeling with Approximated Convolutional Kernels. In *Conference on Robotics Learning (CoRL)*, 2018.
41. A. Tompkins, R. Senanayake, **F.T. Ramos**. Automorphing Kernels for Nonstationarity in Mapping Unstructured Environments. In *Conference on Robotics Learning (CoRL)*, 2018.
42. R. Senanayake, **F.T. Ramos**. Directional Grid Maps for Angular Motion Modeling. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2018.
43. P. Morere, R. Marchant, **F.T. Ramos**. Continuous State-Action-Observation POMDPs for Trajectory Planning with Bayesian Optimisation. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2018.

44. T. Blau, L. Ott, **F.T. Ramos**. Improving Reinforcement Learning Pre-Training with Variational Dropout. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2018.
45. R. Carvalhaes Possas, S. Carceres, **F.T. Ramos**. Egocentric Activity Recognition on a Budget. In *Computer Vision and Pattern Recognition (CVPR)*, 2018. **Oral talk.**
46. A. Tompkins, **F.T. Ramos**. Fourier Feature Approximations for Periodic Kernels in Time-Series Modelling. In *Association for Advancements in Artificial Intelligence (AAAI)*, 2018.
47. R. Senanayake, **F.T. Ramos**. Building Continuous Occupancy Maps with Moving Robots. In *Association for Advancements in Artificial Intelligence (AAAI)*, 2018.
48. V. Guizilini, **F.T. Ramos**. Iterative Continuous Convolution for 3D Template Matching and Global Localization. In *Association for Advancements in Artificial Intelligence (AAAI)*, 2018.
49. R. Oliveira, L. Ott, **F.T. Ramos**. Learning to Race through Coordinate Descent Bayesian Optimisation. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2018.
50. T. Ganegedara, L. Ott, **F.T. Ramos**. Learning to Navigate by Growing Deep Networks. In *Australasian Conference on Robotics and Automation (ACRA)*, 2017.
51. R. Senanayake, **F.T. Ramos**. Bayesian Hilbert Maps for Dynamic Continuous Occupancy Mapping. In *Conference on Robotics Learning (CoRL)*, 2017.
52. V. Guizilini, **F.T. Ramos**. Variational Hilbert Regression with Applications to Terrain Modeling. In *International Symposium on Robotics Research (ISRR)*, 2017.
53. G. Francis, L. Ott, **F.T. Ramos**. Functional Path Optimisation for Exploration in Continuous Occupancy Maps. In *International Symposium on Robotics Research (ISRR)*, 2017.
54. R. Oliveira, L. Ott, **F.T. Ramos**. Bayesian Optimisation for Safe Navigation under Localisation Uncertainty. In *International Symposium on Robotics Research (ISRR)*, 2017.
55. R. Inoue, V. Guizilini, M.H. Terra, **F.T. Ramos**. Markovian Jump Linear Systems-based filtering for Visual and GPS Aided Inertial Navigation System. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017.
56. V. Guizilini, **F.T. Ramos**. Learning to Reconstruct 3D Structures for Occupancy Mapping. In *Robotics: Science and Systems (RSS)*, 2017. **Best Paper Award Finalist**
57. G. Francis, L. Ott, **F.T. Ramos**. Stochastic Functional Gradient for Motion Planning in Continuous Occupancy Maps. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2017.
58. P. Morere, R. Marchant, **F.T. Ramos**. Sequential Bayesian Optimisation for POMDPs and Environment Monitoring with UAVs. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2017.
59. C. De Alvis, L. Ott, **F.T. Ramos**. Online Learning for Scene Segmentation With Laser-Constrained CRFs. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2017.
60. R. Senanayake, S. O'Callaghan, **F.T. Ramos**. Learning Highly Dynamic Environments with Stochastic Variational Inference. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2017.
61. V. Guizilini, **F.T. Ramos**. Unsupervised Feature Learning for 3D Scene Reconstruction with Occupancy Maps. In *Association for the Advancements of Artificial Intelligence (AAAI)*, 2017.
62. R. Oliveira, L. Ott, **F.T. Ramos**. Active Perception for Modelling Energy Consumption in Off-Road Navigation. In *Australasian Conference on Robotics and Automation (ACRA)*, 2016.
63. R. Senanayake, L. Ott, S. O'Callaghan, **F.T. Ramos**. Spatio–Temporal Hilbert Maps for Continuous Occupancy Representation in Dynamic Environments. In *Advances in Neural Information Processing Systems (NIPS)*, 2016.
64. A. Hata, **F.T. Ramos**, D. Wolf. Particle Filter Localization on Continuous Occupancy Maps. In *The 15th International Symposium on Experimental Robotics (ISER)*, 2016.
65. D. Shen, **F.T. Ramos**. Kernel Embeddings of Longitudinal Data. In *Advances in Artificial Intelligence: 29th Australasian Joint Conference (AI2016)*, 2016.

66. C. de Alvis, L. Ott, **F.T. Ramos**. Urban Scene Segmentation With Laser-Constrained CRFs. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2016.
67. V. Guizilini, **F.T. Ramos**. Large-Scale 3D Scene Reconstruction with Hilbert Maps. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2016.
68. T. Ganegedara, L. Ott, **F.T. Ramos**. Online Adaptation of Deep Architectures with Reinforcement Learning. In *European Conference on Artificial Intelligence (ECAI)*, 2016.
69. D. Habermann, C. Vido, F. Osorio, **F.T. Ramos**. Road Junction Detection from 3D Point Clouds. In *International Joint Conference on Neural Networks (IJCNN)*, 2016.
70. R. Senanayake, S. O'Callaghan, **F.T. Ramos**. Predicting Spatio-Temporal Propagation of Seasonal Influenza using Variational Gaussian Process Regression. In *Association for the Advancement of Artificial Intelligence (AAAI)*, 2016.
71. C. Vido, **F.T. Ramos**. From Grids to Continuous Occupancy Maps through Area Kernels. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2016.
72. K.C.T. Vivaldini, V. Guizilini, M. Oliveira, T.H. Martinelli, D. Wolf , **F.T. Ramos**. Route planning for active classification with UAVs. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2016.
73. A. Bewley, L. Ott, **F.T. Ramos**, B. Upcroft. ALExTRAC: Affinity Learning by Exploring Temporal Reinforcement within Association Chains. *In IEEE International Conference on Robotics and Automation (ICRA)*, 2016.
74. **F.T.Ramos**, L. Ott, Hilbert maps: scalable continuous occupancy mapping with stochastic gradient descent. In *Robotics: Science and Systems (RSS)*, 2015.
75. M. Gerardo-Castro, T. Peynot, R. Fitch, **F.T. Ramos**, Non-Parametric Consistency Test for Multiple- Sensing-Modality Data Fusion. In International Conference on Information Fusion, 2015.
76. J. R. Souza, C. Mendes, V. Guizilini, K. Vivaldini, A. Colturato, **F.T.Ramos**, K. Castelo Branco, D. Wolf. Automatic Detection of Ceratocystis Wilt in Eucalyptus Crops from Aerial Images. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2015.
77. V. Guizilini, **F.T.Ramos**. A Non-Parametric Online Platform for Air Quality Prediction. In *Association for Advancements of Artificial Intelligence Conference (AAAI)*, 2015.
78. S. Abeywardana, **F.T.Ramos**. Nonparametric Variational Bayes Quantile Regression. In *Association for Advancements of Artificial Intelligence Conference (AAAI)*, 2015.
79. L. Ott, L. Pang, **F.T. Ramos**, S. Chawla. On Integrated Clustering and Outlier Detection. In *Neural Information Processing Systems (NIPS)*, 2014.
80. M. Schneider, **F.T. Ramos**, Transductive Learning for Multi-Task Copula Processes. In *European Conference on Artificial Intelligence (ECAI)*, 2014.
81. S. O'Callaghan, **F.T. Ramos**, Gaussian process occupancy maps for dynamic environments. In *The 14th International Symposium on Experimental Robotics (ISER)*, 2014.
82. R. Marchant, **F.T. Ramos**, S. Sanner, Sequential Bayesian Optimisation for Spatial-Temporal Monitoring. In *Uncertainty in Artificial Intelligence (UAI)*, 2014.
83. R. Marchant, **F.T. Ramos**, Bayesian Optimisation for Informative Continuous Path Planning. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2014.
84. J. Souza, R. Marchant, L. Ott, D. Wolf, **F.T. Ramos**, Bayesian Optimisation for Active Perception and Smooth Navigation. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2014.
85. A. Bewley, V. Guizilini, **F.T. Ramos**, B. Upcroft, Online Self-Supervised Multi-Instance Segmentation of Dynamic Objects. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2014.
86. K. Zhan, S. Faux, **F.T. Ramos**, Multi-scale Conditional Random Fields for First-Person Activity Recognition, In *IEEE International Conference on Pervasive Computing and Communications (PerCom)*, 2014.

87. K. Zhan, V. Guizilini, **F.T. Ramos**. Dense Motion Segmentation for First-Person Activity Recognition. In *IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV)*, 2014.
88. M. P. Gerardo-Castro, T. Peynot and **F.T. Ramos**. Laser-Radar Data Fusion with Gaussian Process Implicit Surfaces. In *Field and Service Robotics Conference (FSR)*, 2013.
89. A. Reid and S. O'Callaghan and E. V. Bonilla and L. McCalman and T. Rawling and **F. Ramos**. Bayesian Joint Inversions for the Exploration of Earth Resources. In *International Joint Conference on Artificial Intelligence (IJCAI)*, 2013.
90. L. Ott, **F.T. Ramos**. Multi-Sensor Clustering using Layered Affinity Propagation. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2013.
91. A. Reid, **F.T. Ramos**, S. Sukkarieh. Bayesian fusion for multi-modal aerial images. In *Proceedings of the Robotics: Science and Systems (RSS) IX*, 2013.
92. V. Guizilini, **F.T. Ramos**. Online Self-Supervised Segmentation of Dynamic Objects. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2013.
93. L. McCalman, S. O'Callaghan, **F.T. Ramos**. Multi-Modal Estimation with Kernel Embeddings for Learning Motion Models. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2013.
94. S. Garg, A. Singh, **F.T. Ramos**. Efficient Space-Time Modeling For Informative Sensing. In *Sixth International Workshop on Knowledge Discovery from Sensor Data*, 2012.
95. A. Ball, D. Rye, **F.T. Ramos**, M. Velonaki. Unsupervised clustering of people from 'Skeleton' data. 7th ACM/IEEE International Conference on Human-Robot Interaction, New York, NY, USA: Association for Computing Machinery (ACM), 2012.
96. R. Marchant, **F.T. Ramos**. Bayesian Optimisation for Intelligent Environmental Monitoring. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2012.
97. S. Garg, A. Singh, **F.T. Ramos**. Learning Non-Stationary Space-Time Models for Environmental Monitoring. In *Association for the Advancements of Artificial Intelligence (AAAI)*, 2012.
98. K. Zhan, **F.T. Ramos**. Activity Recognition from a Wearable Camera. In *IEEE International Conference on Control, Automation, Robotics and Vision (ICARCV)*, 2012.
99. N. Chehade, A.P. Ozisik, J. Gomez, **F.T. Ramos**, G. Pottie. Detecting Stumbles with a Single Accelerometer. In *Engineering in Medicine and Biology Conference (EMB)*, 2012.
100. V. Guizilini, **F.T. Ramos**. Semi-parametric Models for Visual Odometry. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2012.
101. L. Ott, **F.T. Ramos**. Unsupervised Incremental Learning for Long-Term Autonomy. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2012.
102. H. Zhou, P. Hatherly, S. Monteiro, **F.T. Ramos**, F. Oppolzer, E. Nettleton, S. Scheding. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2012.
103. J. van de Ven, **F.T. Ramos**. Distributed Anytime MAP Inference. In *Uncertainty in Artificial Intelligence (UAI)*, 2011.
104. S. O'Callaghan, **F.T. Ramos**. Continuous Occupancy Mapping with Integral Kernels. In *Association for the Advancements of Artificial Intelligence (AAAI)*, 2011.
105. A. Melkumyan, **F.T. Ramos**. Multi-Kernel Gaussian Processes. In *International Joint Conference on Artificial Intelligence (IJCAI)*, 2011.
106. S. Monteiro, J. van de Ven, **F.T. Ramos**, P. Hatherly. Learning 3D Geological Structure from Drill-Rig Sensors for Automated Mining. In *International Joint Conference on Artificial Intelligence (IJCAI)*, 2011.
107. S. Vasudevan, **F.T. Ramos**, E. Nettleton, H. Durrant-Whyte. Non-stationary dependent Gaussian processes for data fusion in large-scale terrain modeling. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2011.

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