

Namdar Homayounfar

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📄 [nhoma.github.io/](https://github.com/nhoma)

Work Experience

- Fall 2017 - Present **Research Scientist**, *Uber Advanced Technologies*, Toronto, Canada.
Manager: Raquel Urtasun
- Summer 2017 **Computer Vision Intern**, *Uber Advanced Technologies*, Toronto, Canada.
Manager: Raquel Urtasun

Education

- Fall 2014 - Present **PhD Candidate in Statistics**, *University of Toronto*, Toronto, Canada.
Supervision: Prof. Raquel Urtasun
Specialization: Statistical Machine Learning and Computer Vision
- 2013 - 2014 **MSc Statistics**, *University of Toronto*, Toronto, Canada.
- 2009 - 2013 **BSc Honours Probability and Statistics**, *McGill University*, Montreal, Canada.

Publications and Submissions

- 2019 **Exploiting Sparse Semantic HD Maps for Self-Driving Vehicle Localization**, *Ma W.C. *, Tartavull I. *, Barsan I.A. *, Wang S. *, Bai M., Mattyus G., Homayounfar N., Lakshmikanth S., Pokrovsky A., Urtasun R.*, Under Review CVPR 2019.
- 2019 **DAGMapper: Learning to Map by Discovering Lane Topology**, *Homayounfar, N. *, Ma, W. C., Liang J., Wu, X., Fan, J., Urtasun, R.*, ICCV 2019.
- 2019 **Convolutional Recurrent Network for Road Boundary Extraction**, *Liang J. *, Homayounfar, N. *, Ma, W. C., Wang S., Urtasun, R.*, CVPR 2019.
- 2018 **Deep Multi-Sensor Lane Detection**, *Bai M. *, Mattyus G. *, Homayounfar N., Wang S., Lakshmikanth S., Urtasun R.*, IROS 2018.
- 2018 **Hierarchical Recurrent Attention Networks for Structured Online Maps**, *Homayounfar, N., Ma, W. C., Lakshmikanth, S. K., Urtasun, R.*, CVPR 2018.
- 2017 **Sports Field Localization via Deep Structured Models**, *Homayounfar N., Fidler S., Urtasun R.*, CVPR 2017.
- 2015 **Periodic Solutions of a Singularly Perturbed Delay Differential Equation with Two State-Dependent Delays**, *Humphries A. R., Bernucci D. A., Calleja R. C., Homayounfar N., Snarski M.*, Journal of Dynamics and Differential Equations.
- 2013 **MCMC Clustering and Its Convergence Issues**, *Homayounfar N., Asgharian M., Partovi Nia V.*, Contributed Poster in JSM.

Research Assistant Experience

- Summer 2013 - Fall 2013 **Research Assistant**, *"Finite Mixture of Regression Models with Varying Coefficient Means"*, McGill University and University of Toronto, Montreal and Toronto, Canada.
Proposed a new class of Finite Mixture of Regression Models and developed an estimation procedure for such models in the R environment. Demonstrated using a simulation study that the proposed model and its estimation procedure have better statistical performance than the traditional Finite Mixture of Linear Regression Models.
- Winter 2013 **Research Assistant**, *"Bayesian Clustering with Markov Chain Monte Carlo"*, McGill University, Montreal, Canada.
Implemented a Bayesian clustering methodology and investigated its convergence issues using the Rcpp package which integrates R and C++ for higher performance. Presented a poster about the project at the 2013 JSM Conference.
- Summer 2012 **Research Assistant**, *"The effect of timing of GCSF administration in neutrophil dynamics"*, Centre for Applied Mathematics in Bioscience and Medicine, Montreal, Canada.
Investigated the effects of timing of chemotherapy drug administration on the minimum levels of white blood cells in cancer patients using analytical techniques and simulation studies in MATLAB. Proposed new research directions based on findings.

Summer 2011 **Research Assistant**, "*Computing Periodic Orbits in a Family of State Dependent Delay Differential Equations*", Institut des Sciences Mathématiques, Montreal, Canada.
Coded and analyzed the dynamical features of a family of state-dependent delay differential equations using numerical methods implemented in the MATLAB software package DDEBIFTOOL.

Teaching Assistant Experience

2013 - Present **Teaching Assistant**, Department of Statistics, University of Toronto, Toronto, Canada.
Performed TA duties for various undergraduate and graduate courses in machine learning and probability and statistics.

Awards and Scholarships

Fall 2017 - **Ontario Graduate Scholarship (OGS) at the University of Toronto.**
Summer 2018

Fall 2016 - **Ontario Graduate Scholarship (OGS) at the University of Toronto.**
Summer 2017

Fall 2014 **University of Toronto Faculty of Arts and Science Outstanding Graduate Admissions Award.**

Fall 2014 - Present **University of Toronto PhD Fellowship.**

Summer 2014 **University of Toronto Department of Statistics Andrews Academic Achievement Award for outstanding work in the Master's program.**

Fall 2013 - **University of Toronto MSc Fellowship.**
Summer 2014

Summer 2012 **NSERC Award through Professors Michael Mackey, Antony Humphries and Jacques Bélair.**

Winter 2012 **CAMBAM Undergraduate Research Fellowship.**

Summer 2011 **Institut Des Sciences Mathématiques Undergraduate Summer Scholarship.**

Toolbox

Languages: PyTorch, Tensorflow, Python, R, MATLAB, C/C++

Human Languages: English, French, Persian

OS: Unix, Mac, Windows

Miscellaneous

Citizenship: Canadian

Hobbies: Soccer, Travelling, Books, Movies