



October 19, 2020

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Online

robertmattila
 rmattila

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Programming

- Matlab, Python, Julia
- Algorithm implementation
- fast.ai: Practical Deep Learning for Coders, v3

Mathematics

- Hidden Markov models
 - Statistics, machine learning, optimization
- Systems and control

Awards

- KTH-EE Scholarship of Excellence (1 MSEK)
- H. Göransson's Scholarship for outstanding grades
- KTH Student Scholarship for outstanding grades

Languages

Swedish ★★★★★
 English ★★★★★
 Spanish ★★★☆☆

Computers

- OSX, Linux, Windows
 - \LaTeX , Git

Robert Mattila

Researcher | KTH Royal Institute of Technology

Profile

I received my Ph.D. degree in June 2020 based on my research on inference and control of stochastic dynamic systems (e.g., hidden Markov models). My research has been published in the leading venues for machine learning and artificial intelligence (NeurIPS, ICML), as well as those for signal processing and control theory.

During my doctoral studies, I have extensively practiced independent research and problem solving. Most of my papers have involved algorithm implementation and evaluation in either Python, Matlab or Julia. I have also had several opportunities to teach and supervise students, as well as collaborate with other researcher (in, e.g., medicine).

Publications (selected)

- R. Mattila, et al., "Inverse filtering for hidden Markov models with applications to counter-adversarial autonomous systems", *IEEE Transactions on Signal Processing*, 2020.
- R. Mattila, et al., "Fast and consistent learning of hidden Markov models by incorporating non-consecutive correlations", *Int. Conf. on Machine Learning (ICML)*, 2020.
- R. Mattila, et al., "Inverse filtering for hidden Markov models", *Advances in Neural Information Processing Systems (NeurIPS)*, 2017.
- R. Mattila, et al. "A Markov decision process model to guide treatment of abdominal aortic aneurysms", *IEEE Conference on Control Applications*, 2016.

Education and Experience

2020–	Post-Doctoral Researcher	KTH Stockholm, Sweden
2015–2020	Ph.D. Degree <i>Hidden Markov Models: Identification, Inverse Filtering and Applications</i> Supervisors: Prof. Bo Wahlberg, Prof. Cristian Rojas <ul style="list-style-type: none"> • <i>research</i>: published in 4 journals and 13 conferences • <i>education</i>: took courses on POMDPs, Bayesian networks, statistics and probability, optimization, etc. • <i>teaching</i>: taught reinforcement learning (M.Sc., 120 students), stochastic control and optimization (M.Sc.), automatic control theory (B.Sc.) 	KTH Stockholm, Sweden
2019	Visiting Researcher (also '14, '15, '17) Supervisor: Prof. Vikram Krishnamurthy	Cornell University Ithaca, USA
2010–2015	M.Sc. in Engineering (civ.ing. Teknisk Fysik) B.Sc. <i>Engineering Physics</i> M.Sc. <i>Systems, Control and Robotics</i> GPA: 5.0/5.0; graduated in 4.5 years	KTH Stockholm, Sweden
2014	Research Internship (SURF) Supervisors: Prof. Richard Murray, Prof. Yilin Mo	Caltech California, USA
2013	Erasmus Exchange Programme GPA: 8.1/10.0 (Courses in Spanish)	UCM Madrid, Spain