September 26, 2020


## Contact

+46 76 201 405 6
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## Online

robertmattila
rmattila
**www:** rmattila.github.io


## Programming

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

## Mathematics

• Hidden Markov models
• Statistics, machine learning, optimization

## 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

# RobertMattila, Ph.D.

Researcher | KTH Royal Institue 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 leading venues for machine learning and artificial intelligence (NeurIPS, ICML), as well those for signal processing and control theory (SPL, TSP, CDC).

During my Ph.D., I have learned: • independent research and problem solving, • teaching and presenting for an audience, • written communication, • time-management, • critical thinking, • algorithm implementation and evaluation (in Python, Matlab and Julia).

I am interested in opportunities related to machine learning, data analytics and their future applications in real-world scenarios – for example, next-generation health-care and finance.

## 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", *International Conference on Machine Learning (ICML)*, 2020.
- R. Mattila, et al., "Inverse filtering for hidden Markov models", *Advances in Neural Information Processing Systems* (NeurIPS), 2017.

## Education and Experience

2020– **Post-Doctoral Researcher** KTH | Stockholm, Sweden

2015–2020 **Ph.D. Degree** KTH | Stockholm, Sweden
*Hidden Markov Models: Identification, Inverse Filtering and Applications*
Supervisors: Prof. Bo Wahlberg, Prof. Cristian Rojas

- *research:* published in 4 journals and 13 conferences
- *education:* took courses on POMDPs, Bayesian networks, statistics and probability, optimization, etc.
- *teaching:* taught reinforcement learning (M.Sc., 120 students), stochastic control and optimization (M.Sc.), automatic control theory (B.Sc.)

2019 **Visiting Researcher (also '14, '15, '17)** Cornell University | Ithaca, USA
Supervisor: Prof. Vikram Krishnamurthy

2014 **Research Internship (SURF)** Caltech | California, USA
Supervisors: Prof. Richard Murray, Prof. Yilin Mo

2013 **Erasmus Exchange Programme** UCM | Madrid, Spain
GPA: 8.1/10.0 (Courses in Spanish)

2010–2015 **M.Sc. in Engineering (civ.ing. Teknisk Fysik)** KTH | Stockholm, Sweden
B.Sc. *Engineering Physics* M.Sc. *Systems, Control and Robotics*
GPA: 5.0/5.0

For details, see full CV: `https://rmattila.github.io/public/cv_mattila.pdf`