Robert Mattila

Ph.D. Student | KTH Royal Institue of Technology

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Social

in robertmattila
 rmattila
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Languages

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

Programming

• Matlab, Python, Julia
• Django: **kibok.se**

Computers

• OSX, Linux, Windows
• LaTeX, Git

Awards

• KTH-EE Scholarship
of Excellence
(1 MSEK)

• Henrik Göransson's
Scholarship for
outstanding grades

• KTH Student
Scholarship for
outstanding grades

Profile

Currently a Ph.D. student researching identification, control and inference in stochastic dynamical systems. Interested in machine learning, data analytics and their future applications in real world scenarios – for example, in next-generation health-care.

Some of the skills that I have picked up during my Ph.D. studies are: independent research and problem solving, teaching and presenting for an audience, written communication, time-management, critical thinking, algorithm implementation and evaluation.

Publications (selected)

- Robert Mattila, Cristian R. Rojas, Vikram Krishnamurthy, and Bo Wahlberg. Inverse filtering for hidden Markov models. In *Advances in Neural Information Processing Systems 30* (**NIPS'17**), pages 4207–4216, 2017.

- Robert Mattila, Cristian R. Rojas, Vikram Krishnamurthy, and Bo Wahlberg. Asymptotically efficient identification of known-sensor hidden Markov models. *IEEE Signal processing letters*, 24(12):1813–1817, 2017.

- Antti Siika, Robert Mattila, Bo Wahlberg, and Joy Roy. An optimal gender-specific treatment policy for abdominal aortic aneurysms constructed using a Markov decision process model. *Journal of Vascular Surgery*, 65(6):175S, 2017. In the Society for Vascular Surgery's Vascular Annual Meeting (SVS VAM'17).

Education and research

2017	**Visiting researcher**	Cornell Tech, Manhattan
	Supervisor: Prof. Vikram Krishnamurthy	
2015 - Now	**Ph.D. Student**	KTH, Stockholm
	Supervisors: Prof. Bo Wahlberg, Assoc. Prof. Cristian Rojas	
	Courses: • Partially observed Markov decision processes • Game theory • Mathematical methods in signals, systems and control • Bayesian networks • Hybrid systems (stability, stabilization, abstraction and formal verification) • Probabilistic verification and synthesis • Matrix algebra • Probability and random processes • Convex optimization • Stochastic control and optimization • Deep learning in data science (attended lectures)	
2015	**Visiting researcher**	University of British Colombia, Vancouver
	Supervisor: Prof. Vikram Krishnamurthy	
2014	**Research internship**	Caltech, California
	Supervisors: Prof. Richard Murray, Asst. Prof. Yilin Mo	
2013 - 2014	**M.Sc. in Systems, Control and Robotics**	KTH, Stockholm
	GPA 5.0/5.0	
2013	**Erasmus exchange studies**	UCM, Madrid
	GPA 8.1/10.0 (Courses in Spanish)	
2010 - 2013	**B.Sc. in Engineering Physics**	KTH, Stockholm
	GPA 5.0/5.0	

Teaching

I have taught/supervised: • Bachelor thesis (inverse Markowitz portfolio selection) • Stochastic control and optimization (M.Sc. level) • Master thesis (optimal input design) • Automatic control (B.Sc. level, twice) • Project course in electrical engineering (B.Sc. level).