

# KISHOR PATIL

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## RESEARCH INTERESTS

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Stochastic Modelling, Queueing theory, Reinforcement learning, Mean Field Limits, Stochastic Approximation.

## EDUCATION

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<b>Ph.D.</b> , Telecommunications and Information Processing, Ghent University	Dec. 2015 - Sept. 2019
<b>M.Tech.</b> , Industrial Engineering and Operations Research, IIT Bombay (GPA: 9.16/10)	Jul. 2012 - Jun. 2014
<b>B.Tech.</b> , Electronics and Telecommunication, SGGSIT Nanded (GPA: 8.43/10)	Jul. 2008 - Jun. 2012

## RESEARCH EXPERIENCE

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<b>Postdoctoral Fellow</b> INRIA, Sophia Antipolis, France Advisor: Dr. K. Avrachenkov Stochastic approximation and reinforcement learning with applications in page crawling.	Oct. 2019 - Present
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<b>Ph.D. Research</b> Ghent University, Ghent, Belgium Advisors: Prof. D. Fiems, Dr. K. De Turck Stochastic modelling of wireless sensor networks.	Dec. 2015 - Sep. 2019
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<b>Visiting Research Fellow</b> Laboratoire des Signaux et Systèmes, CentraleSupélec, Paris, France Supervisor: Dr. K. De Turck Optimal control in large scale wireless sensor networks - A mean field approach	Sep. 2018 - Nov. 2018
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<b>Masters Thesis</b> IIT Bombay, Mumbai, India Advisor: Prof. N. Hemachandra Firm User-set Interactions in the Context of Admission Control Queues - Equilibrium sets	May. 2013 - Jun. 2014
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## JOURNAL PUBLICATIONS

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- **K. Patil**, M. Jafri, D. Fiems and A. Marin. Stochastic Modeling of Depth Based Routing in Underwater Sensor Networks. *Ad Hoc Networks* 1570-8705 (19) : 132-141, 2019
- **K. Patil**, K. De Turck, and D. Fiems. Optimal data collection in wireless sensor networks with correlated energy harvesting. *Annals of Telecommunication* 1958-9395 : 1-12, 2018.
- **K. Patil**, and D. Fiems. The value of information in energy harvesting sensor networks. *Operations Research Letters* 46 (3) : 362-366, 2018.
- **K. Patil**, K. De Turck, Koen and D. Fiems. A two-queue model for optimising the value of information in energy-harvesting sensor networks. *Performance Evaluation* 0166-5316 (119) : 27-42, 2017.
- **K. Patil**, K. De Turck, and D. Fiems. Optimal control in large scale wireless sensor networks - A mean field approach . *Performance evaluation, Submitted - under revision*, 2019.
- N. Hemachandra, S. Tripathi, and **K. Patil**. Equilibrium points and equilibrium sets of some GI/M/1 queues *Queueing Systems, Submitted - under revision*, 2020.

## PROCEEDINGS AND REPORTS

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- K. Avrachenkov, **K. Patil** and G. Thoppe. Change Rate Estimation and Optimal Freshness in Web Page Crawling, *In VALUETOOLS 2020 - 13th EAI International Conference on Performance Evaluation Methodologies and Tools*. ACM, New York, NY, USA, 3-10.
- **K. Patil**, K. De Turck, and D. Fiems. Optimal Data Collection in Hybrid Energy-harvesting Sensor Networks. *Analytical and Stochastic Modelling Techniques and Applications* 9845:239-252, 2016.
- N. Hemachandra, S. Tripathi, and **K. Patil**. Equilibrium sets of some GI/M/1 queues (with more examples). *IIT Bombay* 2016.

## TEACHING EXPERIENCE

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### Ghent University

Teaching Assistant, Department of TELIN, Ghent University

**C003399** Computer Intensive Statistical Methods Spring 2018

### IIT Bombay

Teaching Assistant, Department of IEOR, IIT Bombay

- **IE 616** Decision Analysis and Game Theory Spring 2014
- **IE 605** Engineering Statistics Autumn 2013

## SELECTED TALKS

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- **K. Patil**, joint work with K. Avrachenkov and G. Thoppe INRIA, 2020  
Online algorithms for estimating page change rates in adaptive web page crawling
- **K. Patil**, joint work with K. De Turck, Koen and D. Fiems INRIA, 2019  
Performance evaluation of large-scale wireless sensor networks - A mean field approach.
- **K. Patil**, joint work with K. De Turck, Koen and D. Fiems IIT Bombay 2019  
Stochastic Modelling of energy harvesting wireless sensor networks
- **K. Patil** joint work with M. Jafri, D. Fiems and A. Marin StochMod 2018  
Performance evaluation of depth based routing in underwater sensor networks
- **K. Patil**, joint work with K. De Turck, Koen and D. Fiems ECQT 2018  
Optimal control in wireless sensor networks: a mean-field approach

## PROFESSIONAL EXPERIENCE

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### Analyst - Business Consulting

Jul. 2014 - Oct. 2015

HSBC Data Processing Centre, Bangalore, India

Global Investigation Analytics

Model development, deployment, validation and tuning with Statistical methods.

## ADDITIONAL TRAINING

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### Workshops

- Summer school on Numerical methods for stochastic models: mean-field, CIRM, Marseille summer 2017
- Introduction to High performance Computing, Ghent University Spring 2017
- Workshop on Mathematica, Ghent university Autumn 2016

### Selected Coursework

- E003700 - Game Theory with Engineering Applications Autumn 2018
- E014230 - Stochastic Processes Autumn 2017
- CS 709 - Convex Optimization Autumn 2013
- IE 647- Applied Integer Programming Autumn 2013

## SKILL SET

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### Programming Languages

Python, C, SQL, AMPL, R

### Computational/ Utility Tools

MATLAB, Mathematica, L<sup>A</sup>T<sub>E</sub>X

### Statistical Tools

R, SAS

### Platforms

Mac OS (X), Linux (Ubuntu, Fedora)

## EXTRA-ACADEMIC ACTIVITIES

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- Jury member of master thesis committee; Thesis entitled “The P2Pool mining pool - An analysis of a distributed cryptographically secured database”. Oct. 2018
- Volunteered at master thesis fair at Ghent university to give the information on department’s research domains so that students can choose their thesis topic. Feb. 2017