Wasiur Rahman Khuda Bukhsh

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https://wasiur.github.io/

Online Databases

- Google Scholar link
- ORCID orcid.org/0000-0003-1803-0470

Education

Technische Universität Darmstadt — **Darmstadt, Germany**
Ph.D. — *2014–to date*
Thesis: Model reductions for queueing and agent-based systems with applications in communication networks
Advisor: Prof. Dr. Heinz Koeppl

Indian Statistical Institute — **Kolkata, India**
Master of Statistics (M.Stat.) — *2009–2011*

University of Calcutta — **Kolkata, India**
Bachelor of Science (B.Sc.) with Honours in Statistics — *2006–2009*

Employments

Technische Universität Darmstadt — **Darmstadt, Germany**
Research Associate — *2014–to date*
Bioinspired Communication Systems,
Department of Electrical Engineering and Information Technology

ICICI Bank — **Mumbai, India**
Manager — *2011–2013*
Advanced Analytics, Business Intelligence Unit (BIU)

Publications

Peer-reviewed publications

[1] Wasiur R. KhudaBukhsh, Bastian Alt, Sounak Kar, Amr Rizk, and Heinz Koeppl. Collaborative uploading in heterogeneous networks: Optimal and adaptive strategies. In *IEEE International Conference on Computer Communications (INFOCOM)*, 2018. $< 20\%$ **acceptance rate. Best-in-Session Presentation Award.**

[2] Wasiur R. KhudaBukhsh, Amr Rizk, Alexander Frömmgen and Heinz Koeppl. Optimizing Stochastic Scheduling in Fork-Join Queueing Models: Bounds and Applications. In *IEEE International Conference on Computer Communications (INFOCOM)*, May 2017. Available: `http://ieeexplore.ieee.org/document/8057013/`, $\sim 20\%$ **acceptance rate**.

[3] A. Šošić, W. R. KhudaBukhsh, A. M. Zoubir, and H. Koeppl. Inverse reinforcement learning in swarm systems. In *AAMAS Workshop on Transfer in Reinforcement Learning*, May 2017. Available: `http://www.tirl.info/proceedings/2017/SosicEtal-Inverse.pdf`.

[4] A. Šošić, W. R. KhudaBukhsh, A. M. Zoubir, and H. Koeppl. Inverse reinforcement learning in swarm systems. In *International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*, May 2017. Available: `https://dl.acm.org/citation.cfm?id=3091320`, $\sim 26\%$ **acceptance rate**, **Best Paper Award Finalist**.

[5] Wasiur R. KhudaBukhsh, Julius Rückert, Julian Wulfheide, David Hausheer and Heinz Koeppl. Analysing and Leveraging Client Heterogeneity in Swarming-based Live Streaming. In *IFIP Networking Conference (IFIP Networking) and Workshops*, pages 386–394, May 2016. Available: `http://ieeexplore.ieee.org/document/7497234/`, $\sim 26\%$ **acceptance rate**.

[6] Mahdi Mousavi, Hussein Al Shatri, W. R. KhudaBukhsh, Heinz Koeppl, and Anja Klein. Cross-Layer QoE-based Incentive Mechanism for Video Streaming in Multi-Hop Wireless Networks. In *IEEE 86th Vehicular Technology Conference (VTC)*, September 2017.

Preprints

[7] Wasiur R. KhudaBukhsh, Amr Rizk, Sounak Kar, and Heinz Koeppl. Provisioning and performance evaluation of parallel systems with output synchronization, 2017. A shorter version with preliminary results available at: `https://arxiv.org/abs/1612.05543`.

[8] Wasiur R. KhudaBukhsh, Casper Woroszylo, Grzegorz Rempała and Heinz Koeppl. A Functional Central Limit Theorem for Susceptible-Infected (SI) Process on Configuration Model Graphs, 2017. ArXiv preprint: `https://arxiv.org/abs/1703.06328`.

[9] Hye-Won Kang, Wasiur R. KhudaBukhsh, Heinz Koeppl, and Grzegorz Rempała. Quasi-steady-state approximations derived from a stochastic enzyme kinetics, 2017. arXiv preprint: `https://arxiv.org/abs/1711.02791`.

[10] Wasiur R. KhudaBukhsh, Julius Rückert, Julian Wulfheide, David Hausheer, and Heinz Koeppl. SchedMix: Heterogeneous strategy assignment in swarming-based live streaming, 2017. Under revision.

[11] W. R. KhudaBukhsh, Arnab Auddy, Yann Disser, and Heinz Koeppl. Approximate lumpability for markovian agent-based models using local symmetries, 2018. arXiv preprint: `http://arxiv.org/abs/1804.00910`.

Professional Memberships

- The Institute of Electrical and Electronics Engineers (IEEE)
- Verband der Elektrotechnik, Elektronik und Informationstechnik (VDE)
- The Society for Mathematical Biology (SMB)

Professional Services

Reviewer

- IEEE Multi-Conference on Systems and Control, Sydney, Australia, 2015

Honours

Funding

- The German Academic Exchange Service (DAAD) travel grant (Kongressreise) to participate in the Annual Meeting of the SMB in Sydney, Australia

Awards

- Best-in-Session Presentation Award at the IEEE International Conference on Computer Communications (IEEE INFOCOM), Honolulu, Hawaii, USA, 2018.

Talks

Conference presentations

- IEEE International Conference on Computer Communications (IEEE INFOCOM), Honolulu, Hawaii, USA, 2018
- IEEE International Conference on Computer Communications (IEEE INFOCOM), Atlanta, GA, USA, 2017
- IFIP Networking Conference and Workshops, Vienna, Austria, 2016

Invited talk

- Cloud Computing, Machine Learning And Networking Research (CLAN) Lab, Purdue University (May, 2017)
  Host : Vaneet Aggarwal

Teaching Experience

- Computational Methods for Systems and Synthetic Biology (CMSSB)
  Technische Universität Darmstadt, Germany
  Role: Teaching Assistant
  Terms: Summer semester 2016, Summer semester 2017

Research Visits

- The Mathematical Biosciences Institute, The Ohio State University
  Host : Grzegorz A. Rempała
  Visit periods: June, 2016; February-March, 2017; May, 2017

Student Supervision

B.Sc. Students

- Vikash Vikash, 2016, Summer internship, Technische Universität Darmstadt, Germany
- Simon Schwanz, 2016, Proseminar, Technische Universität Darmstadt, Germany
- Simon Schwanz, 2017, Project seminar (jointly with Christian Koch), Technische Universität Darmstadt, Germany
- Siddhaarth Sarkar, 2018, Summer internship, Technische Universität Darmstadt, Germany

M.Sc. Students

- Arnab Auddy, 2017, Summer internship, Technische Universität Darmstadt, Germany

- Markus Schanz, 2017, Master thesis (jointly with Christian Koch), Technische Universität Darmstadt, Germany
- Hameer Abbasi, 2017, Master thesis (ongoing, jointly with Bastian Alt), Technische Universität Darmstadt, Germany
- Ranjani Krishnan, 2018, Master thesis (ongoing, jointly with Denny Stohr), Technische Universität Darmstadt, Germany
- Sayantan Kumar, 2018, Summer internship, Technische Universität Darmstadt, Germany

Conferences

- IEEE International Conference on Computer Communications (IEEE INFOCOM), Honolulu, Hawaii, USA, 2018
- Spring school on "Spin Systems: Discrete and Continuous ", Technische Universität Darmstadt, Germany, 2018
- IEEE International Conference on Computer Communications (IEEE INFOCOM), Atlanta, GA, USA, 2017
- The Mathematical Biosciences Institute Emphasis Workshop on "Modelling of Tissue Growth and Form", Columbus, OH, USA, 2017
- IFIP Networking Conference and Workshops, Vienna, Austria, 2016
- US - Canadian Institutes Epidemiology Summer School, Columbus, OH, USA, 2016
- Foundations and Advances in Stochastic Filtering (FASF), Barcelona, Spain, 2015
- European Agent Systems Summer School (EASSS), Chania, Greece, 2014
- International Conference on Autonomous Agents & Multiagent Systems (AAMAS), Paris, France, 2014

Languages

English: Professional Proficiency

Bengali: Mother Tongue

Hindi : Working Knowledge

German: Intermediate (B1 level)

Computer Skills

Programming Languages: C, R, Python, SQL, Julia

Software: Matlab, SAS, Microsoft Office, LaTeX