List of Publications

June 13, 2021

1 Publications

1.1 Peer-reviewed journal publications

[1] **Wasiur R. KhudaBukhsh***, Hye-Won Kang, Eben Kenah, and Grzegorz Rempała. Incorporating age and delay into models for biophysical systems. *Physical Biology*, 18(1), 2021. (*Invited paper).

[2] **Wasiur R. KhudaBukhsh**, Boseung Choi, Eben Kenah, and Grzegorz Rempała. Survival Dynamical Systems for the Population-level Analysis of Epidemics. *Interface Focus*, 10(1), 2020.

[3] **Wasiur R. KhudaBukhsh**, Arnab Auddy, Yann Disser, and Heinz Koeppl. Approximate lumpability for markovian agent-based models using local symmetries. *Journal of Applied Probability*, 56, 9 2019.

[4] Hye-Won Kang*, **Wasiur R. KhudaBukhsh***, Heinz Koeppl, and Grzegorz Rempała. Quasi-steady-state approximations derived from a stochastic enzyme kinetics. *Bulletin of Mathematical Biology*, 81(5):1303–1336, 2019. *joint first authors.

[5] **Wasiur R. KhudaBukhsh**, Sounak Kar, Bastian Alt, Amr Rizk, and Heinz Koeppl. Generalized cost-based job scheduling in very large cluster systems. *IEEE Transactions on Parallel and Distributed Systems*, 31(11):2594–2604, 2020.

[6] Boseung Choi, Sydney Busch, Dieudonné Kazadi, Benoit Ilunga, Emile Okitolonda, Yi Dai, Robert Lumpkin, Omar Saucedo, **Wasiur R. KhudaBukhsh**, Joseph Tien, Marcel Yotebieng, Eben Kenah, and Grzegorz A. Rempała. Modeling Outbreak Data: Analysis of a 2012 Ebola Virus Disease Epidemic in DRC. *BIOMATH*, 8(2), 2019.

[7] **Wasiur R. KhudaBukhsh**, Amr Rizk, Sounak Kar, and Heinz Koeppl. Provisioning and performance evaluation of parallel systems with output synchronization. *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS)*, 4(1), 3 2019.

[8] Bastian Alt, Markus Weckesser, Christian Becker, Matthias Hollick, Sounak Kar, Anja Klein, Robin Klose, Roland Kluge, Heinz Koeppl, Boris Koldehofe, **Wasiur R. KhudaBukhsh**, Mahdi Mousavi, Martin Pfannemueller, Amr Rizk, Andy Schuerr, and Ralf Steinmetz. Transitions: A protocol-independent view of the future internet. *Proceedings of the IEEE*, 107(4):835–846, 4 2019.

[9] **Wasiur R. KhudaBukhsh**, Julius Rückert, Julian Wulfheide, David Hausheer, and Heinz Koeppl. SchedMix: Heterogeneous strategy assignment in swarming-based live streaming. *Open Transactions on Communication Systems (OTCS)*, 2019. Accepted for publication.

1.2 Peer-reviewed conference proceedings

[10] **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)*, pages 1–9, 4 2018. $< 20\%$ acceptance rate. Best-in-Session Presentation Award.

[11] **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)*, pages 1–9, 5 2017. $\sim 20\%$ acceptance rate.

[12] Adrian Šošić, **Wasiur R. KhudaBukhsh**, A. M. Zourbir, and Heinz 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.

[13] Adrian Šošić, **Wasiur R. KhudaBukhsh**, A. M. Zourbir, and Heinz Koeppl. Inverse reinforcement learning in swarm systems. In *International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*, page 1413–1421, 5 2017. $\sim 26\%$ acceptance rate, Best Paper Award Finalist.

[14] **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, 5 2016. $\sim 26\%$ acceptance rate.

[15] Mahdi Mousavi, Hussein Al Shatri, **Wasiur 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)*, 9 2017.

1.3 Preprints/Submitted

[16] **Wasiur R. KhudaBukhsh**, Casper Woroszylo, Grzegorz Rempała, and Heinz Koeppl. A Functional Central Limit Theorem for Susceptible-Infected (SI) Process on Configuration Model Graphs. *Advances in Applied Probability*, 2020. Under revision. ArXiv preprint: https://arxiv.org/abs/1703.06328.

[17] **Wasiur R. KhudaBukhsh**, Sat Kartar Khalsa, Eben Kenah, Grzegorz Rempała, and Joseph Tien. COVID-19 dynamics in an Ohio prison. 2021. Preprint: https://www.medrxiv.org/content/10.1101/2021.01.14.21249782v1.

[18] Ido Somekh, **Wasiur KhudaBukhsh**, Elisabeth Dowling Root, Greg Rempala, Eric Simoes, and Eli Somekh. Quantifying the Population-level Effect of COVID-19 Mass Vaccination Campaign in Israel: A Modeling Study. 2021.

[19] Saumya Yashmohini Sahai, Saket Gurukar, **Wasiur R. KhudaBukhsh**, Srinivasan Parthasarathy, and Grzegorz A. Rempała. A Machine Learning Model for Nowcasting Epidemic Incidence. *Mathematical Biosciences*, 2021. Minor revision requested.

[20] Matthew Wascher, Patrick Schnell, **Wasiur R. KhudaBukhsh**, Joseph Tien, and Grzegorz Rempała. Monitoring SARS-CoV-2 Transmission and Prevalence in Populations under Repeated Testing. *Annals of Applied Statistics*, 2021. Submitted.

1.4 Manuscripts in progress

[21] **Wasiur R. KhudaBukhsh**, Caleb Deen Bastian, Matthew Wascher, Colin Klaus, Mark Weir, Eben Kenah, Elisabeth Root, Joseph H. Tien, and Grzegorz Rempała. Projecting COVID-19 Cases and Subsequent Hospital Burden in Ohio.

[22] Francesco Di Lauro*, **Wasiur R. KhudaBukhsh***, István Z. Kiss, Eben Kenah, Max Jensen, and Grzegorz Rempała. Dynamic survival analysis of non-makrovian models for infectious disease epidemiology, 2021. * Both authors contributed equally and are joint first authors.

[23] **Wasiur R. KhudaBukhsh** and Eben Kenah. Semiparametric pairwise regression for infectious disease transmission with external sources of infection.

[24] Yushuf Sharker*, Zaynab Diallo*, **Wasiur R. KhudaBukhsh**, and Eben Kenah. Pairwise accelerated failure time models with external sources of infection and epidemiological studies of infectious disease transmission. *Joint first authors.

1.5 Thesis and technical notes

[25] **Wasiur R. KhudaBukhsh**. *Model reductions for queueing and agent-based systems with applications in communication networks*. PhD thesis, Technische Universität, Darmstadt, 2018. Available at: http://tuprints.ulb.tu-darmstadt.de/7588/.

[26] **Wasiur R. KhudaBukhsh**, Mark Sinzger, and Heinz Koeppl. Bounds on the spectral radius of real-valued non-negative kernels on measurable spaces. Technical report, 2018. arXiv preprint: https://arxiv.org/abs/1808.00258.