Angelos Aveklouris

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Research interests

My main research interests are in the broad field of probability theory and operations research. Currently, I am working on matching problems that appear in service platforms, for example, ridesharing firms (such as Uber and Lyft), online markers, etc. I develop optimal matching policies using asymptotic techniques.

During my Ph.D studies, I worked on fluid and diffusion approximations of stochastic networks with multiple interactive layers that appear in many applications such as communication, computer, manufacturing, and electric vehicle charging systems. The development and analysis of such models require tools from queueing theory, probability theory, optimization, statistics, and electrical engineering.

Research Positions

Sept. 2019 – present	Postdoctoral Research Fellow, The University of Chicago Booth School of Business. Supervisor: Prof. Amy R. Ward.
Sept. 2015 – Aug. 2019	Ph.D. candidate, Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.

Education

Academic degrees

Sept. 2015 – Aug. 2019	**Ph.D. in Mathematics** Department of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands. Supervisors: Dr. Maria Vlasiou, Prof. Bert Zwart. Thesis committee: S.C. Borst, R.J.R. Cruise, M. Gibescu, J.L. Hurink, S. Kapodistria, M. Vlasiou, A.P. Zwart.
Sept. 2015 – Sept. 2018	**LNMB Diploma** (Ph.D. courses) Dutch Network on the Mathematics of Operations Research.
Sept. 2013 – June 2015	**Masters in Mathematical Modeling in Modern Technologies and Finance** (degree grade: 9.2/10) Direction: Finance. Department of Mathematics, Technical University of Athens, Greece. Thesis advisor: Prof. Gerassimos A. Athanassoulis.
Sept. 2008 – July 2012 [1]	**Bachelors in Mathematics** (degree grade: 6.7/10) Major Field: Applied Mathematics. Minor Field: Statistics and Operations Research. Department of Mathematics, National and Kapodistrian University of Athens, Greece.

[1] Sept. 2012 – July 2013: Mandatory military service for Greek citizens

CERTIFICATIONS

April 2018 — **Practical Data Analysis using R for Researchers**
Eindhoven University of Technology, the Netherlands.

RESEARCH ACTIVITIES

LONG-TERM VISITS

Jan. – May 2019 — The mathematics of energy systems, Isaac Newton Institute, Cambridge, UK.

November 2016 — Algorithms and Uncertainty programme, The Simons Institute for the Theory of Computing, Berkeley, USA.

March 2016 — Hong Kong University of Science and Technology, Hong Kong.

TRAVEL GRANTS

June 2018 — Stochastic Network Conference, Edinburgh, UK.

July 2017 — 19th INFORMS APS Conference, Evanston, USA.

June 2016 — Stochastic Network Conference, San Diego, USA.

PUBLICATIONS

THESES

[T1] Angelos Aveklouris (2020). Layered stochastic networks with limited resources. PhD thesis, Eindhoven University of Technology, Eindhoven, the Netherlands. ISBN: 978-90-386-4966-5.

[T2] Angelos Aveklouris (2015). Integral Approximation of pdfs and its connection with Large Sample Theory. Master thesis, Technical University of Athens, Greece. http://dspace.lib.ntua.gr/handle/123456789/41432?locale-attribute=en

JOURNAL PUBLICATIONS

[J1] Angelos Aveklouris, Maria Vlasiou, Jiheng Zhang, and Bert Zwart (2017). Heavy-traffic approximations for a layered network with limited resources. Probability and Mathematical Statistics, 37(2): 497–532, 2017. https://arxiv.org/pdf/1701.03370.pdf

[J2] Angelos Aveklouris, Maria Vlasiou, and Bert Zwart (2019). A stochastic resource-sharing network for electric vehicle. IEEE Transactions on Control of Network Systems, 6(3): 1050–1061, 2019. https://arxiv.org/pdf/1711.05561.pdf

[J3] Angelos Aveklouris, Maria Vlasiou, and Bert Zwart (2019). Bounds and limit theorems for a layered queueing model in electric vehicle charging. Queueing Systems: Theory and Applications, 93(1): 83–137, 2019 https://arxiv.org/pdf/1810.05473.pdf

CONFERENCE PROCEEDINGS

[C1] Angelos Aveklouris, Yorie Nakahira, Maria Vlasiou, and Bert Zwart (2017). Electric vehicle charging: a queueing approach. ACM SIGMETRICS Performance Evaluation Review – Special issue on the Mathematical performance Modeling and Analysis (MAMA) workshop proceeding 2017. https://arxiv.org/pdf/1712.08747.pdf

WORKING PAPERS (SUBMITTED/UNDER PREPARATION)

[W1] Angelos Aveklouris, Maria Vlasiou, and Bert Zwart. A fluid model of an electric vehicle charging network. *Submitted.* https://arxiv.org/pdf/2004.05637.pdf

[W2] Angelos Aveklouris, Levi DeValve, Amy R. Ward, and Xiaofan Wu. Matching impatient and heterogeneous demand and supply. *Under preparation.*

Research Talks

Presentations given by co-authors are marked with a *.

Invited Talks

Nov. 2018 Stochastic networks for electric vehicle charging. INFORMS annual meeting, Phoenix, USA.

July 2018* How to handle congestion under uncertainty in power systems using Little (Keynote). European Conference on Queueing Theory, Jerusalem, Israel.

June 2018* Power systems and applied probability: Electric Vehicles. Summer School on Random Structures and Processes, Edinburgh, UK.

June 2018* A stochastic resource-sharing network for electric vehicle charging. Stochastic Models VI, Bedlewo, Polland.

March 2018* A stochastic resource-sharing network for electric vehicle charging. Societal Networks, Berkeley, USA.

Feb. 2018* A stochastic resource-sharing network for electric vehicle charging. Montefiore Institute, Belgium.

Jan. 2018* A stochastic resource-sharing network for electric vehicle charging. Management of energy networks, Edinburgh, UK.

Dec. 2017 A stochastic resource-sharing network for electric vehicle charging. 11th Young European Queueing Theorists workshop, Eindhoven, the Netherlands.

July 2017 Electric vehicle charging – a queueing approach. 19th INFORMS APS Conference, Evanston, USA.

Oct. 2017* Electrical vehicle charging – a queueing approach. INFORMS annual meeting, Houston, USA.

July 2017* Heavy-traffic approximations for a layered network with limited resources. 19th INFORMS APS Conference, Evanston, USA.

Conference Presentations

July 2018 A novel application of layered queueing networks in electric vehicle charging. European Conference on Queueing Theory, Jerusalem, Israel.

Jan. 2018 A stochastic resource-sharing network for electric vehicle charging. 43th Conference on the Mathematics of Operations Research, Lunteren, the Netherlands.

July 2017* Electrical vehicle charging – a queueing approach. ACM SIGMETRICS conference (MAMA), Illinois, USA.

Jan. 2017 A diffusion approximation in a two-layered network. 42th Conference on the Mathematics of Operations Research, Lunteren, the Netherlands.

July 2016 State space collapse for a two-layered network. European Conference on Queueing Theory, Toulouse, France.

Posters

June 2018 Stochastic networks for electric vehicle charging. Stochastic Networks Conference, Edinburgh, UK.

April 2018 Queueing networks for electric vehicle charging. Dutch Mathematical Congress, Veldhoven, the Netherlands.

Other Presentations

May 2016 State space collapse for a two-layered network. Ph.D. Colloquium, Eindhoven University of Technology, the Netherlands.

Teaching Experience

Courses Taught

2019 – 2020 Teaching assistant, The University of Chicago Booth School of Business.

- Managing Service Operations (Bus 40110, MBA), Winter 2019–2020.

2015 – 2018 Graduate teaching assistant, Eindhoven University of Technology.

- Mathematics 2 (2DD50), Fall 2016–2017 (Semester A Quartile 2) and Fall 2017–2018 (Semester A Quartile 2).
- Stochastic performance modeling (2WB60), Spring 2016–2017 (Semester B Quartile 3) and Spring 2017–2018 (Semester B Quartile 3).
- Statistics (2DD80), Spring 2015–2016 (Semester B Quartile 4) and Spring 2016–2017 (Semester B Quartile 4).
- Statistics (2DL20), Fall 2016–2017 (Semester A Quartile 2).
- Biostatistics and Linear Algebra (2DM80), Spring 2015–2016 (Semester B Quartile 3) and Spring 2016–2017 (Semester B Quartile 3).
- Linear Algebra and Statistics (6A6X0), Fall 2015–2016 (Semester A Quartile 2).

Professional Service

Referee for: *IEEE Transactions on COntrol of NEtwork Systems*, *IEEE Transactions on Automatic Control*, *STochastic SYstems*.

Skills

Programming Languages	Mathematica, Matlab, R, Python (Beginner level)
Software	LaTeX, Microsoft Office (Word, Excel, Power Point), SPSS
Languages	Greek, English

Development

- Attendance of the course *Scientific Integrity*, offered by Eindhoven University of Technology.
- Attendance of the course *Giving an Audience-Focused Presentation*, offered by Eindhoven University of Technology.
- Attendance of the course *Testable Learning Outcomes*, offered by Eindhoven University of Technology.
- Attendance of the course *Machine Learning* offered by Stanford University (Coursera).