QUICO SPAEN

CONTACT DETAILS

Address: 1275 Bonita Avenue, Apt 201
94709 Berkeley, California
United Stated of America

E-mail: qspaen@berkeley.edu / quico@spaen.nl
Telephone: +1 510-604-3630
Linkedin: https://linkedin.com/in/quicospaen/

EDUCATION

University of California, Berkeley
PhD in Industrial Engineering & Operations Research — 2014 – Dec 2018 (expected)
MSc in Computer Science - Artificial Intelligence, GPA: 4.0 / 4.0 — 2016 – Dec 2018 (expected)
MSc in Industrial Engineering & Operations Research, GPA: 4.0 / 4.0 — 2014 – 2015

Research interest: Combinatorial Optimization, Machine Learning, Transportation, Deep Learning, and Reinforcement Learning.
Advisor: Prof. Dorit Hochbaum (PhD), Prof. John Canny (MSc in Computer Science)

Erasmus University Rotterdam
Pre-master Econometrics & Operations Research, GPA: 9.3/10 — 2013 – 2014

Amsterdam University College (University of Amsterdam & VU University Amsterdam)
Honours Bachelor of Science, Liberal Arts and Sciences, Summa Cum Laude with GPA: 3.94 / 4.0 — 2010 – 2013

EXPERIENCE

UC Berkeley
Teaching Positions — 09/2014 – Current

- Instructor for Linear Programming & Network Flows (IEOR 162) in Spring 2017.
  Teaching evaluation: 4.94 / 5.0. Served as teaching assistant in Fall 2015 and Spring 2016.
- Teaching assistant for Network Flows and Graphs (IEOR 266) in Fall 2014-2017.
- Teaching assistant for Portfolio and Risk Analytics (IEOR 224) in Spring 2018.

Winner of UC Berkeley's outstanding GSI award in 2016.

Uber Technologies Inc.
Data Scientist Intern - Marketplace Optimization Data Science — 05/2016 – 08/2016

- Analyzed the prediction accuracy of the ETA shown to a user before a trip request.
- Saved $2.5 million by trading off system-load and prediction accuracy for ETA prediction.
- Developed new prediction models and metrics for the ETA shown to a user before a trip request.
- Designed and estimated an MLE model for the probability of a driver ending its shift based on censored data.

MIcompany
Student Data Scientist — 07/2013 – 07/2014

The consultant MIcompany is the Dutch market leader in Marketing Data Analytics.

- Participated in descriptive and predictive data science projects for the Dutch National Railways (NS) and the insurance company Achmea.
- Managed data processing and updates of management dashboards of the Dutch National Railways (NS).
- Developed & presented a time series forecasting business case for the University of Groningen.
- Prepared presentations for th executive board of the Dutch National Railways.

Royal Dutch Airlines (KLM)
Intern – KLM Decision Support — 06/2013 – 07/2013

- Consulted on a project to identify and address the leading causes of last-minute gate changes at Amsterdam Schiphol Airport.
- Identified the leading causes using statistical analysis on gate allocation data.
- Presented a set of recommendations to KLM's VP of Passenger services.

CURRENT RESEARCH PROJECTS

- **Dispatching under Uncertainty of Location-based Resources**
  Designing and testing algorithms for real-time dispatching of location-based resources such as taxis, maintenance crews, and emergency services.
- **Cell Detection in Biological Movies**
  Developing combinatorial algorithms for cell identification in calcium imaging movies. *Algorithm ranked first in the Neurofinder cell identification benchmark from Jan 2017 to Dec 2017.*
- **Sparsification of Similarity Matrices**
  Developing techniques for computing sparse similarity/kernel matrices to scale machine learning algorithms.
- **Perturbed Stochastic Gradient Descent**
  Improving stochastic gradient descent for deep learning through random perturbations.

PUBLICATIONS

- C. Thraves, M. Velednitsky, and **Q. Spaen**. The Dimension of Signed Graph Valid Drawing, 2017. *Submitted to Discrete & Computational Geometry*.
- P. Baumann, D. S. Hochbaum and **Q. Spaen**. High-Performance Geometric Algorithms for Sparse Computation in Big Data Analytics, *IEEE International Conference on Big Data*, pp. 546-555, Boston, 2017.
- **Q. Spaen**, D. S. Hochbaum, & R. Asín-Achá. HNCcorr: A Novel Combinatorial Approach for Cell Identification in Calcium-Imaging Movies. *arXiv preprint arXiv:1703.01999*, 2017. *Submitted for journal publication*.
- P. Baumann, D. S. Hochbaum and **Q. Spaen**. Sparse-Reduced Computation: Enabling Mining of Massively-Large Data Sets. *International Conference on Pattern Recognition Applications and Methods*, pp. 224-231, Rome, 2016.

HONORS & AWARDS

- **IEOR Faculty Fellowship** - Highest award for IEOR graduate students, UC Berkeley (2016)
- **Outstanding Graduate Instructor**, UC Berkeley (2016)
- **Prince Bernhard Fellowship** - $ 12,500 stipend, Prins Bernhard Cultuurfonds (2015)
- **IEOR First-year Fellowship** - Tuition and stipend for first year of PhD, UC Berkeley (2014)
- **Summa Cum Laude**, Amsterdam University College (2013)

PRESENTATIONS

- High-Performance Geometric Algorithms for Sparse Computation in Big Data Analytics,
  IEEE International Conference on Big Data, Boston, 2017.
- HNCcorr: A Novel Combinatorial Approach for Cell Identification in Calcium Imaging Movies,
  INFORMS Annual Meeting, Houston, 2017.
- Algorithms for automatic segmentation and signal extraction in calcium imaging data,
  IEOR Advisory Board Meeting, Berkeley, 2016.

SERVICE

- IEOR representative to the UC Berkeley's Graduate Student Government (2015-current).
- Chair of IEOR Graduate Student Group (2017-2018)
- Reviewer for ACM Symposium on Discrete Algorithms (2017).
- Reviewer for IEEE Transactions on Big Data (2016).

PROGRAMMING EXPERIENCE

Programming: Python, Matlab, C, Git
Machine learning: Tensorflow, Keras, Sklearn
Optimization: Gurobi, CPLEX, AMPL
Data: SQL, Pandas, Spark