

Erik Bertelli

PhD Candidate in Industrial Engineering and Operations Research | UC Berkeley

☎ 209.777.5759

📍 1201 Buena Vista Ave, Alameda, CA 94501

@ erikbertelli@berkeley.edu

in linkedin.com/in/bertellierik

github.com/MaverickThought



I am a PhD Candidate in the Industrial Engineering and Operations Research Department at UC Berkeley. My research is focused Inventory Control for multi-generational high-tech products with uncertain warranty obligations.

🎓 Education

2016-Present	PhD in Industrial Engineering and Operations Research UC Berkeley
2013-2014	MS in Industrial Engineering and Operations Research UC Berkeley
2010-2013	BS in Industrial Engineering and Operations Research with High Honors UC Berkeley

🔬 Research Projects

Present January 2019	Active-Passive Vehicle Routing Prof Yano, IEOR Dept, UC Berkeley <ul style="list-style-type: none">> Design vehicle routes to maximize the reward from up-to-date street network data> Account for data generation from passive sources in order to prioritize neighborhoods Integer Programming CPLEX AMPL
Present January 2017	Warranty Inventory Control Prof Yano, IEOR Dept, UC Berkeley <ul style="list-style-type: none">> Optimize timing of last time buy of small electronic devices for local technology company> Balance production and inventory costs to satisfy unknown future warranty demand Inventory Control
July 2017 January 2017	Operating Room Scheduling Prof Yano, IEOR Dept, UC Berkeley <ul style="list-style-type: none">> Extended previous OR Block Scheduling model to allow for general partial day assignments> First formal optimization approach with partial day OR block scheduling and recovery bed capacity> Presented results at invited session at POMS conference AMPL CPLEX Python Integer Programming
May 2014 January 2014	Operating Room Scheduling Prof Yano, IEOR Dept, UC Berkeley <ul style="list-style-type: none">> Worked with Kaiser Permanente to develop a Mixed Integer Linear Program for OR scheduling> Distributed OR schedules among specialties in order to minimize bed occupancy & nurse overtime> Improved running time of MILP formulation in AMPL with new objective functions and constraints> Presented results to my advisor and the IEOR department chair who then delivered to the client AMPL CPLEX Integer Programming
December 2013 May 2011	Image Segmentation with Network Graphs Prof Hochbaum, IEOR Dept, UC Berkeley <ul style="list-style-type: none">> Implemented a new network graph normalized-cut image segmentation algorithm using MATLAB> Developed a benchmark and testing framework to objectively compare among methods> Presented our findings in weekly research group meetings and defended my results> Co-authored an academic paper summarizing our results that was recently published MATLAB Network Graphs

👜 Professional Experience

June 2018 August 2018	Product Operations Advanced Analytics Intern Gap Inc., San Francisco, CA <ul style="list-style-type: none">> Built Monte Carlo simulation based on real data to test various inventory allocation strategies> Presented simulated results of my inventory allocation strategy under different pricing trajectories SQL Python Inventory Control
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May 2016 | **Business Consultant | Applied Predictive Technologies, San Francisco, CA**
July 2014

- > Analyzed business initiatives using test & control methodology that drove millions in client revenue
- > Led day to day client relationships, trained software analysts, and presented results to management
- > Managed over 30 data feeds across clients, personally owning daily data ETL processes
- > Collaborated with Engineering teams to develop new product features in response to client needs

SQL R

August 2013 | **Business Consultant Intern | Applied Predictive Technologies, San Francisco, CA**
May 2013

- > Analyzed menu cannibalization following the introduction of a new product at a fast food chain
- > Designed business test & control strategies based on historical data to ensure statistical significance
- > Built chain wide rollout projections based on test results and presented results to the client
- > Set up a SQL database and APT cloud software instance for a new historical dataset for a new client

SQL

August 2012 | **Wafer Planning Intern | Xilinx, San Jose, CA**
May 2012

- > Planned weekly wafer starts for a family of Field Programmable Gate Arrays
- > Developed centralized Excel dashboard to project the next year of weekly wafer starts
- > Set up VBA-SQL interface to automatically updated dashboard with new data
- > Retired ten manual Excel reports, saving other wafer planners over ten hours a week

SQL VBA

Skills

Programming : Python, MATLAB, R, VBA, C, AMPL, CPLEX
Optimization : Linear, Convex, Nonlinear, Mixed Integer, Network Graphs
Stochastic Processes : Queuing, Poisson Processes, Martingales, Brownian Motion
Industrial Engineering : Inventory Control, Quality Control, Facility Location

Awards

January 2018 Grassi Fellowship | UC Berkeley IEOR Department
May 2017 IEOR Graduate Student Group Service Award | UC Berkeley IEOR Department
March 2017 Honorable Mention | National Science Foundation Graduate Research Fellowship Program
May 2014 Outstanding Graduate Student Instructor | UC Berkeley
May 2014 Outstanding Graduate Student Instructor | UC Berkeley IEOR Department
May 2013 Dean's Honors | UC Berkeley College of Engineering
May 2013 Graduated with High Honors | UC Berkeley
May 2011 Member of Tau Beta Pi, the Engineering Honor Society | UC Berkeley
August 2010 Regent's and Chancellors Scholar | UC Berkeley

Publications

> D. S. Hochbaum, C. Lu, and **E. Bertelli**. Evaluating Performance of Image Segmentation Criteria and Techniques. *EURO Journal on Computational Optimization*, May 2013, Volume 1, Issue 1-2, pp 155-180

Presentations

> **E Bertelli** and C Yano, Final Production Run for High-Tech Products Under Warranty, *POMS*, Inventory Management Track, May 6, 2019, Washington, DC
> **E Bertelli** and C Yano, Managing Warranty Inventory for Multi-Generational High-Tech Products, *MSOM*, Inventory Management Track, July 3, 2018, Dallas, TX
> **E Bertelli** and C Yano, Managing Warranty Inventory for Multi-Generational High-Tech Products, *POMS*, Inventory Management Track, May 5, 2018, Houston, TX
> **E Bertelli** and C Yano, Designing Flexible and Financially Prudent Operating Room Block Schedules, *POMS*, Healthcare Scheduling Track, May 5, 2017, Bellevue, WA