

# MIRZAD MOHANDESPOUR

US Permanent Resident  
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## SUMMARY

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- Versatile software engineer with extensive experience in building backend services for mobile/web applications including social features, order processing, and IoT data/device management. Most recent stack: Python/Flask/Django, Postgres, and Redis. DevOps skills: Docker, K8s, Terraform, and AWS.
- Strong analytical background (PhD) in algorithm design, graph theory, linear algebra, and linear/non-linear optimization. Solid knowledge of machine learning concepts and methods.
- Enjoys learning, solving problems, finding obscure bugs, communicating ideas, writing beautiful maintainable code, and codifying processes.

## EXPERIENCE

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### ***Software Engineer***

Smarkets, Los Angeles, 2018-2019

- Built a microservice to provide dashboard view of performance metrics, open orders, and pricing requests (talks to other microservices and Redis).
- Set up load testing for social backend using Locust framework. Used load testing to identify expensive API calls and addressed performance issues with Redis caching.
- Improved mobile app start time by implementing backend caching of liquidity on events and markets (Django, Redis).
- Created a *market police* that checks and reports all markets with low liquidity across Smarkets (run periodically by Jenkins, sends updates to Slack).
- Helped move services managed by LA team to Smarkets K8s environment (managed by London team).

### ***Software Engineer***

Self-Employed, Kansas City Area, 2017

- Analysis of customer churn patterns for a telecom client. Worked closely and effectively with the client to understand domain-specific business requirements, used SQL and SAS to identify and describe the target customer base among millions of customer records distributed in various data sources.

### ***Software Engineer***

Brightergy, Kansas City, MO, 2015-2017

- Energy management startup offering a cloud-based service to report energy data sourced from IoT-enabled meters and thermostats.
- Design and development of a multithreaded Python module to relay data between smart devices and cloud. Development of an adapter (Elixir) to store thermostat readings in a time-series database.
- Major contributions in the design of IoT ecosystem, end-to-end testing, and solving algorithmic problems in electric demand calculation.

### **Research Assistant (Ph.D.)**

Iowa State University, Ames, IA, 2008-2014

- Primary researcher on two projects (PhD work): backup resource provisioning in Internet backbone networks and performance optimization in wireless mesh networks.
- Designed novel cost-effective algorithms and formulated detailed optimization models to address several NP-hard problems in backup reservation and performance maximization.

### **EDUCATION**

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- **Ph.D.** in Computer Engineering, Iowa State University, Ames, IA, 2015
- **M.S.** in Computer Engineering, Sharif University of Technology, Tehran, Iran, 2004
- **B.S.** in Computer Engineering, Sharif University of Technology, Tehran, Iran, 2001

### **SKILLS**

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- Python, C (proficient), Elixir (working knowledge), JS, C++, Groovy, Java (familiar)
- Git, Flask, Django, Phoenix, SQL, Postgres, Redis, Docker, K8s, Terraform
- MATLAB, CPLEX, SAS
- IoT, ZigBee wireless, SmartThings, FPGA, Verilog

### **AWARDS**

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- Graduate Research and Teaching Assistantship, Iowa State University, 2008-2014
- Teaching Excellence Award, Iowa State University, Spring 2011
- Teaching Excellence Award, Jundi-Shapur University (Iran), Fall 2007

### **SELECTED PUBLICATIONS**

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- M. Mohandespour, M. Govindarasu, and Z. Wang, "Rate, energy, and delay tradeoffs in wireless multicast: network coding vs. routing," IEEE Transactions on Mobile Computing, 2015.
- A. Rajabzadeh, S. G. Miremadi, and M. Mohandespour, "Error detection enhancement in COTS superscalar processors with performance monitoring features," Springer Journal of Electronic Testing, 2004.

### **LINKS**

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- LinkedIn: <http://www.linkedin.com/in/mirzad/>
- Github: <http://www.github.com/mirzadm>
- Google Scholar: <https://scholar.google.com/citations?user=4hrpybcAAAAJ>