Rashad Eletreby

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Education

Carnegie Mellon University — Pittsburgh, PA
PhD in Electrical and Computer Engineering — *Aug. 2015 – Sep. 2019*
Thesis: *"Inhomogeneous Models for Random Graphs and Spreading Processes: Applications in Wireless Sensor Networks and Social Networks"*
Adviser: *Prof. Osman Yağan*

Carnegie Mellon University — Pittsburgh, PA
MS in Electrical and Computer Engineering — *Aug. 2015 – Sep. 2019*

Cairo University — Cairo, Egypt
MS in Electrical and Computer Engineering — *Sep. 2012 – July 2014*

Cairo University — Cairo, Egypt
BS in Electrical and Computer Engineering — *Sep. 2007 – July 2012*

Experience

Senior Data Scientist — October 2019 – Present
Walmart — *Hoboken, NJ*

- **Learning to rank:** Analyzing and processing complex data sets using advanced querying, visualization and analytics tools. Automating data scraping, feature engineering, and feature selection for machine learning models. Full stack design of advanced machine learning models in the context of learning to rank to improve the relevance and conversion of search and browse results
- **Experimentation:** Developing a suite of comprehensive offline testing tools that enable faster development iterations. Running customer facing experiments through interleaving and A/B testing

Research Assistant — Aug. 2015 – Sep. 2019
Carnegie Mellon University — *Pittsburgh, PA*

- **Discovering social circles**: Proposed methods for automatic community detection on social network subgraphs under the *social circle analysis* category. The proposed methods combine structural information (graph connectivity) and content information (traits pertaining to each node in the network) to determine communities within social network graphs.
- **Random graph theory**: Proposed novel random graph models that capture the secure connectivity of large-scale, heterogeneous wireless sensor networks. Analyzed the absence of isolated nodes, connectivity, minimum node degree, and k-connectivity of the proposed graphs by means of rigorous mathematical proofs and computer simulations.
- **Network science**: Proposed and analyzed mathematical and simulation models that characterize the role of evolutionary adaptations in facilitating the spread of information and infectious diseases in real-world complex networks
- **Internet of Things**: Worked on the design, evaluation, and implementation of novel techniques that aim to i) disentangle and decode large numbers of interfering LP-WAN transmissions at a simple, single-antenna LP-WAN base station, and ii) extend the transmission range of the current LP-WAN sensors.

Artificial Intelligence Research Assistant — May 2019 – July 2019
Southwestern University — *Georgetown, TX*

- Explored methods to generate video game dungeons based off of *The Legend of Zelda*
- Developed a game in Java to test the generated dungeons
- Contributed 50K+ lines of code to an established codebase via Git
- Conducted a human subject study to determine which video game dungeon generation technique is enjoyable
- Wrote an 8-page paper and gave multiple presentations on-campus
- Presented virtually to the World Conference on Computational Intelligence

Projects

Gitlytics | *Python, Flask, React, PostgreSQL, Docker* June 2020 – Present

- Developed a full-stack web application using with Flask serving a REST API with React as the frontend
- Implemented GitHub OAuth to get data from user's repositories
- Visualized GitHub data to show collaboration
- Used Celery and Redis for asynchronous tasks

Simple Paintball | *Spigot API, Java, Maven, TravisCI, Git* May 2018 – May 2020

- Developed a Minecraft server plugin to entertain kids during free time for a previous job
- Published plugin to websites gaining 2K+ downloads and an average 4.5/5-star review
- Implemented continuous delivery using TravisCI to build the plugin upon new a release
- Collaborated with Minecraft server administrators to suggest features and get feedback about the plugin

Technical Skills

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R
Frameworks: React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI
Developer Tools: Git, Docker, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Libraries: pandas, NumPy, Matplotlib