JOE LEDGER

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EDUCATION

Case Western Reserve University (CWRU) *Cleveland, OH*
M.S. in Computer Science *Expected Graduation: Spring 2018*
Graduate GPA: 4.0
B.S. in Computer Science *Expected Graduation: Spring 2017*
Minor: Applied Data Science
Undergraduate GPA: 3.56
Bronx High School of Science *Graduated: Spring 2013*

KEY PROJECTS

Indexed Personalized Page Rank
- A research effort to speed Personalized Page Rank using precomputed proximity vectors.
- Technologies: Python, Scipy, Matplotlib

Cell Line Classification Project
- A research effort to predict cancer cell line drug response using machine learning.
- Technologies: Python, Python Scientific Stack (Pandas, Scipy, Numpy, Matplotlib), Scikit-Learn

Green Labs Data Visualization Application
- Desktop Application for creating high quality custom visualizations from energy sensor data.
- Technologies: Qt, PyQt, Python, Pandas, Matplotlib

UnVolt Mobile/Web Backend
- Backend for an Personal Energy Recommendations mobile/web application.
- Technologies: Java, Spring Boot, PostgreSQL

WORK EXPERIENCE

CWRU Department of Computer Science Summers: 2015, 2016
Undergraduate Researcher *Cleveland, OH*

- Summer 2016: Worked on Indexed Personalized Page Rank
  - Effort to speed Personalized Page Rank computations by using precomputed proximity vectors.
  - Results are promising: 50-100% speed increases for selected parameter settings.
  - Publication in draft stage.
- Summer 2015: Worked on the Cell Line Classification Project
  - Used machine learning algorithms (Support Vector Machines and Decision Trees) to classify cell lines by their reaction to the cancer drug SMAPs using gene expression and IC50 data.
  - Results presented at the 2015 CWRU Data Science Symposium and 2016 Research ShowCase.
- Both Summers : Peer-reviewed papers for Academic Conferences (ACM-BCB 2015, APBC 2016)

CWRU Office of Sustainability October 2015 - May 2016 (Part Time)
Desktop Application Developer *Cleveland, OH*

- Developed a desktop application with an easy-to-use GUI for non-technical users to make high-quality, fully-customizable data visualizations from energy sensors located in labs around campus. Also includes an integrated energy savings calculator.
- Application is used by lab auditors who write reports on how behavior changes could save energy. Both visualizations and energy calculator results are included in reports.

· Consulted with sustainability experts to determine best types of visualizations to include based on potential impact on behavioral changes.

BldgScout Progamming Intern June - September 2016 (Part Time)
Mobile/Web Backend Development *Cleveland, OH*

· Developed a mobile/web backend for UnVolt, an application designed to provide personalized energy saving recommendations to users based on location, personal preferences, and home characteristics.
· Collaborated with The Form Group (who designed the mobile frontend) on a clear, consistent, and easy to use backend API.
· Designed and implemented scalability and correctness tests for all API endpoints.

RELEVANT COURSEWORK

Data Mining	**Database Systems**
High Performance Scientific Computing	Computer Networks
Machine Learning	Algorithms
Software Engineering	Software Craftsmanship

*Courses in **bold** were taken at the graduate level.

TECHNICAL SKILLS

· Highly Proficient with programming languages Python and Java.
· Proficient with C#, SQL.
· Some experience with C, Javascript, Scheme.
· Experience with data science tools Pandas, Scikit-learn, SciPy, and NumPy.
· Experienced with Git, Linux Command Line, LaTeX.
· Experience with Cross-Platform Desktop Application Development with Qt.
· Experience with REST API development with Java Spring Boot.

HONORS AND AWARDS

· University Merit Scholarship August 2013 - Present
· Alumni Association Outstanding Junior/Senior Scholarship Spring 2016 - Present
· Dean's High Honor Roll Spring 2014, Fall 2014
· Dean's Honor Roll Spring 2015, Fall 2015, Spring 2016
· Varsity Athlete (Cross-Country, Track & Field) for CWRU August 2013 - Present
· 5x UAA All-Academic Team Spring 2014 - Present