DIPRO RAY

507 2nd St., Champaign, IL 61820 • 760-216-3327 • dipror2@illinois.edu
github.com/diproray • linkedin.com/in/diproray

EDUCATION

University of Illinois at Urbana-Champaign Urbana-Champaign, IL
Bachelor of Science (Engineering), Computer Science August 2017 – (Expected) December 2020
Minor, Mathematics **Cumulative GPA: 4.00/4.00**
Edmund J. James Honors Program Scholar, Dean's List

- Taken: Algorithms & Models of Computation, Data Structures Honors, Software Design Studio, Computer Architecture, Discrete Structures Honors, Numerical Methods, Prob & Stats, Intro to Data Analysis & Visualization.
- Current: Systems Programming, Natural Language Processing, Data Mining, Number Theory

PROFESSIONAL EXPERIENCE

Facebook, Inc. May 2019 – August 2019
Software Engineering Intern – Typeahead Team, Search Org Menlo Park, CA

- Performed feature engineering on two people search and usecase models to reduce their original features capacity by 67%, and ran their A/B tests on 25+ million people which recorded stat-sig online metric gains for app search engagement.
- Improved internal simulator tooling for Typeahead engineers using Hack, PHP and Javascript. Impact: improved rendering speed by 10x; added functionality to view NLP signals and backend request/response, and compare ranking features data.
- Onboarded the people search typeahead ML model to DAG workflow for easier ML model lifecycle management.

National Center for Supercomputing Applications August 2018 – May 2019
Software Engineering and Research (SPIN) Intern – High Performance Computing for Genomics group Champaign, IL

- Fully automated a developed statistical analysis and pipeline design through R code, optimizing it through fast matrix calculation, forking and multi-threading, and building a GUI for the pipeline.
- Upgrading the statistical pipeline in place for preprocessing research data by integrating Apache SparkR usage, containerizing for cloud deployment; ultimately, publishing it on CRAN and open-sourcing through Github.

Illinois Geometry Lab August 2018 – December 2018
Undergraduate Researcher Champaign, IL

- Detecting broad patterns in traffic activity, parking behaviors in large metropolitan cities by applying unsupervised machine learning (low-rank factorization) on relevant datasets collected from San Francisco and New York.
- Developing analytical software for this purpose and visualizing software to interpret obtained results, working mainly in Python, scikit-learn and other data science libraries.

EarthSense, Inc. October 2017 – February 2018
Software Developer Champaign, IL

- Wrote Python scripts for 20-30% of test automation modules for the startup's TerraSentia, an autonomous robot.
- Worked with libraries like boto3 (to upload diagnostic data to AWS), OpenCV (to verify video frame uniqueness).
- Researched frameworks and libraries to collect geospatial data and to find optimal path of movement for TerraSentia.

PROJECTS

Music Visualizer April 2018 – May 2018

- Created a computer application that synthesizes real-time 2D and 3D visualizations of music by analyzing its frequency spectrum, amplitude waveform and other technical aspects, using C++, openFrameworks, Essentia music analysis library.
- Eliminated irregularity and abruptness in visualization of raw technical data using the CGI concept of Perlin Noise.

Alexa News Scraper App March 2018 – June 2018

- In-charge of 20% of backend Python development; tasks involved writing website scraping scripts for local news sources, extracting a list of descriptive words for news article images, using Beautiful Soup 4, Microsoft Cognitive Services API.

TECHNICAL TOOLS

Very Knowledgeable: C++, Python, Java.
Knowledgeable: Git, MySQL, LaTeX, data-centric Python libraries (Scikit-learn, Pandas, Matplotlib, Numpy, Scipy).
Somewhat Knowledgeable: C, Hack/PHP, Javascript, R, Racket, Android, Verilog, MIPS.

RECENT PROFESSIONAL INVOLVEMENT

Tau Beta Pi • Reflections | Projections Tech Conference • FORWARD Data Lab • CS 374 Staff • ACM • Nav Talent