Jack C. Jansons

Milford, MA ● 508-826-0307 ● jcj59@cornell.edu ● https://www.linkedin.com/in/jackjansons/ ● https://github.com/jcj59

Education

Cornell University, College of Engineering Ithaca, NY
Bachelor of Science in Computer Science, Operations Research and Information Engineering Expected Graduation May 2025
GPA: 3.882 – Dean's List (Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024)

- **Courses:** Advanced Topics in Machine Learning, Machine Learning, Deep Learning, Artificial Intelligence, Reinforcement Learning, Stochastic Processes, Optimization I-II, Simulation Modeling, Probability Theory I-II, Data Science, Discrete Structures, Linear Algebra, Algorithms, Object Oriented Programming and Data Structures (Java), Functional Programming (OCaml), Computer System Organization (C), Intro to Computing (Python), Multivariable Calculus, and Differential Equations
- **Skills:** Python, Java, C/C++, PyTorch, Pandas, Sci-Kit Learn, Numpy, Matplotlib, SQL, Git, Linear/Integer Programming, Neural Networks, Computer Vision, NLP, Transformers, Diffusion Models, Generative Models, Graph Neural Networks, and LLMs

Experience

Meta Platforms, Inc. Seattle, WA
Software Engineer Intern *May 2024-August 2024*

- Migrated wizard flow to unified frontend system to enable **modularity** and **robustness** of business verification system on Facebook
- Integrated wizard flow with signal-based backend architecture to enhance the **clarity** and **maintainability** of verification system
- Proactively identified key blockers by outlining implementation process enabling project to finish 3 weeks ahead of schedule
- Drove conversations with cross functional teams from around the world to propose dynamic solutions to blockers and took initiative to implement solutions efficiently allowing for increased uptime and productivity on project progress
- Facilitated debugging by implementing improvements to internal tools to showcase key business verification insights

Computer Science Department – Cornell University Ithaca, NY
Introduction to Machine Learning – Teaching Assistant *January 2024-June 2024*

- Enhanced understanding of course material by breaking down complex concepts into manageable components and simple visuals
- Refreshed projects covering advanced ML topics: linear models, boosting, kernels, deep networks, and generative models

Revisiting Garg's 2-Approximation Algorithm for the k-MST Problem in Graphs – Research Assistant *June 2023-June 2024*

- Developed first implementation of 2-approximation algorithm for k-MST problem in **Python** based on algorithm's research papers

Staples, Inc. Framingham, MA
Software Engineer Intern *June 2023-August 2023*

- Achieved over 42% efficiency increase for a machine learning data pipeline processing over 600 million records by identifying system inefficiencies with **SQL** and making strategic application changes with **Java** in **Eclipse**
- Presented comprehensive report in **Excel** to sales team identifying key customers and accounts from an Oracle database using **SQL**, **Java**, and **Bitbucket** to enable successful negotiation of over $1 million contract with business partner
- Spearheaded development of a new **Java** application for ingesting over 70 million records into a database table with **SQL**

Project Experience

Analytics of Sports Betting Ithaca, NY
ORIE Undergraduate Research Society – Undergraduate Researcher *January 2024-June 2024*

- Presented proposal for sports betting research project to course staff based on handicapping methodologies from "Gambler"
- Implemented **web scraping** bot to systematically extract historical NFL data from the 2001 season to present
- Researched data science and analysis techniques from academic articles for forecasting information with discrete time series data
- Designed NFL spread betting system leveraging **LSTMs** to predict expected points added for various aspects of an NFL game
- Incorporated regularization techniques including **dropout**, **normalization**, **early stopping**, **learning rate schedule**, **weight decay** for **l2-regularization**, and **model architecture simplificatio**n to prevent **overfitting** on inherently sparse and noisy data

Feature Pyramid Networks for Object Detection Reimplementation Ithaca, NY
Cornell University – Deep Learning *February 2024-May 2024*

- Analyzed FPN research paper identifying model architecture and noting key hyperparameters utilized in initial implementation
- Reimplemented feature pyramid network architecture in **PyTorch** with an **RPN** and **Fast R-CNN** head using **Detectron2**
- Tuned hyperparameters and trained model for over 160 hours on **Google Cloud** to reproduce accuracy results from original paper

Deep Portfolio Optimization Ithaca, NY
Cornell University – Practicum in Artificial Intelligence *January 2024-May 2024*

- Engineered **LSTMs** to model discrete time series data to accurately predict expected returns and risks for various assets
- Devised and implemented a modular **integer programming** system to **optimize** portfolios to enable scalability and customization
- Constructed **UI** to facilitate user inputs to personalize portfolio optimization parameters for objective and constraint functions

Leadership

Cornell Running Club Ithaca, NY
Vice President | President *August 2021-Present*

- Oversee executive board and implement initiatives to promote inclusivity, team bonding, and camaraderie to drive club attendance
- Promote the sport of running on campus and in the local community by leading daily runs and volunteering at local road races