Aydan Pirani

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EDUCATION

B.S. in Computer Science (Focus in Systems/Networking/Security), *University of Illinois at Urbana-Champaign* May 2024 (est.)

- **Coursework:** Distributed Systems, Parallel Programming, Systems Programming, Data Structures, Software Design Lab, Computer Architecture, String Algorithms, Discrete Structures, Prob and Stats for CS.
- **Anticipated Coursework:** Algorithms and Models of Computation, Database Systems, Intro to Artificial Inelligence, Computer Networks.
- **Course Staff:** Lead Course Assistant (Software Design Lab).

EXPERIENCE

Software Engineering Intern, *Microsoft* May 2022 – Aug 2022

- Interned with the Azure Anti-Fraud Team.
- Built and deployed an end-to-end pipeline to optimize detector performance by approx. 5%.
- Enhanced functionality of internal fraud detection tools to provide stronger evidences of fraud.

RESEARCH

Distributed Protocols Research Group (DPRG), *University of Illinois at Urbana-Champaign* Aug 2022 – present

- Working with Prof. Indranil Gupta.
- Designing systems to efficiently balance overheads incurred by machine learning.
- Performing computational experiments to evaluate Tensorflow graph allocation at varying levels of granularity.

Digital Humanities Project, *University of Illinois at Urbana-Champaign* Jun 2021 – May 2022

- Implemented computer vision algorithms to detect faces of actors within moving and still images.
- Developed skin detection pipeline to detect smooth skin patches on input faces, then perform statistical analyses to normalize and quantify actors' skin colors.
- Wrote and optimized scripts to generate testing/training datasets by batch-downloading large sets of images.
- Presented findings at Undergraduate Research Symposium.

Genie Project, *Stanford University* Dec 2020 – Apr 2021

- Built a NLP-based policy to perform an implicit cast, converting implicitly-mentioned user-provided Number Objects to Currencies.
- Debugged and enhanced functionality of OAuth policies in Slackmond (a Slack-Almond bridge).
- Implemented dictionary feature to query open-source dictionary APIs whenever users requested a word's definition.

Laboratory of Exotic Atoms and Molecules, *Massachusetts Institute of Technology* Apr 2020 – Apr 2021

- Computationally modeled electrostatic devices designed to focus streams of charged particles.
- Visualized simulated particle beam trajectories and their interactions with electric fields using Pandas, Numpy, Matplotlib, and Scikit.

PROFESSIONAL DEVELOPMENT

Distributed Deep Learning Workshop, *Nvidia* Nov 2022 – present

- Invited to participate in a 4-week course, conducted by Nvidia engineers and NCSA researchers.
- Lecture content covered: Maximizing throughput via deep learning training, implementation of Pytorch Distributed Data Parallel, and algorithmic considerations specific to multi-GPU training.

ABCS Fellow, *Facebook* Aug 2021 – Oct 2021

- Participated in Facebook's 9-week workshop to learn algorithmic thinking, data structures and algorithms.
- Attended lectures and completed practice problems on the following: Trees, Linked Lists, Hash Tables, etc.

CSSI Scholar, *Google* Jul 2021 – Jul 2021

- Selected for advanced track: project-based JavaScript and Firebase curriculum taught by Google engineers.
- Attended product design, resume development, and software engineering interview workshops.

AWARDS

Deans' List (2x), *University of Illinois at Urbana-Champaign*

James Scholar Honors, *University of Illinois at Urbana-Champaign*

SKILLS

Programming Languages
C/C++, Python, C#, CUDA, Java, JavaScript.

Data Science/AI
SQL, U-SQL, Numpy, Pandas, SKLearn, OpenCV.

Frameworks
Flask, Node.JS, React.

Misc
Git/Github, Firebase, Microsoft Azure, EC2, Linux.