Maximilian Dittgen

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Education

Cornell University — Ithaca, NY
M.Eng. in Computer Science — *Expected Graduation May 2026*

Cornell University — Ithaca, NY
B.S. in Computer Science, Minor in Smart Cities, 3.94/4.00 GPA, Dean's List — *Aug. 2021 – May 2025*
Relevant Courses: Algorithms, Object-Oriented Programming (Java), Functional Programming (OCaml), Operating Systems (C), Natural Language Processing (Pytorch), Computer Vision (Python), Software Engineering (C++)

Professional Experience

Software Engineering Intern | **Java** — May 2024 – August 2024
Capital One — *McLean, VA*
- Architected, implemented, and validated automated data pipeline to capture and publish Zelle transaction events to Snowflake data warehouse, handling 350,000 customer payments per day
- Designed aspect-oriented pointcuts in Java Spring to splice data publication flows into existing Zelle API endpoints
- Collaborated with fraud analyst end users to understand service requirements and ensure data scalability

Software Engineering Intern | **C, Linux, Go** — May 2023 – August 2023
Exostellar — *New York, NY*
- Optimized Xen hypervisor to speed live migration of Docker containers between AWS EC2 cloud instances by 50%
- Created Linux kernel driver to dynamically adjust memory allocated to a container during migration, enabling more workloads to run a single host virtual machine
- Developed gRPC service to manage resources and processes of cloud containers from local user interface

Undergraduate Research Fellow | **Python, Go** — May 2022 – August 2022
Boston University Performance & Energy-Aware Computing Lab — *Boston, MA*
- Improved speed and cost of scalable serverless cloud infrastructure built from microcontroller computing cluster
- Built optimized Linux kernels to boot onto BeagleBone Black compute nodes, decreasing workload execution time by 30% and energy consumption by 5.6x
- Designed Micropython, Go, and Bash experiments to measure cluster performance, cost, and energy efficiency

Leadership Experience

Teaching Assistant | *Cornell Department of Computing and Information Science* — January 2024 - present
- CS 4852, Market Design: Topics include game theory, matching algorithms, auctions, and computational economics
- Lead discussions of 35+ students to teach material; also responsible for grading student tests and problem sets

Design and Operations Subteam Lead | *Cornell Unmanned Air Systems* — September 2022 - May 2023
- Led Operations subteam of CUAir, 60-student engineering team building fully-autonomous search-and-rescue aircraft
- Drove technical and media reporting, raising $25k in donations and placing 4th of 73 at international competition

Projects

Constructive Comment | JavaScript | To be presented at CHI 2024 — January 2024 - present
- Develop UI and UX of Generative AI writing aid that coaches rural, low-resource users in India to draft constructive Reddit posts and comments, working under Cornell's Computing for Global Development Lab
- Iteratively improved AI model and user interface based on routine surveys deployed in India and the United States

Foret | Python, Vertex AI | Y Combinator Best Hack Award at HackMIT 2023 — September 2023
- Investment analytics API that scrapes, summarizes, and fact-checks corporate sustainability reports into short blurbs
- Leveraged LangChain and Vertex AI Text-Bison to summarize long-form ESG report PDFs
- Trained sentiment model to fact-check corporate sustainability reports against web-scraped news articles

Technical Skills

Languages: Java, C/C++, OCaml, Python, MATLAB, R, Go, HTML/CSS, Bash Script
Tools and Frameworks: Git, Docker, AWS Serverless/EC2, Linux Kernel, Jenkins, Pytorch/Numpy, Spring, IntelliJ IDEA