JACHYM PUTTA

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Education

Yale University, New Haven, CT (Aug 2023 – May 2025)
M.S. in Computer Science – Advisor: Prof. Anurag Khandelwal

Yale-NUS College, Singapore (Aug 2018 – Dec 2022)
B.S. (Honors) in Computer Science – Major GPA: 3.8/4.0

University of Oxford, Oxford, UK (Oct 2022 – Dec 2022)
Visiting Student in Math and Computer Science (Oriel College)

Skills

- **Programming Languages:** Rust, Python, C, C++, TypeScript, OCaml
- **Tools & Technologies:** Docker, Linux, Nix, WebAssembly (WASM), Git, ONNX
- **Domains & Concepts:** Distributed Systems, Cloud Infrastructure, Blockchain & Cryptography, Machine Learning, Systems Programming

Experience

Graduate Research Assistant, Yale University – New Haven, CT (Aug 2022 – May 2025)

- *Instrumenting* various machine learning models with **Intel Pin**, **NVBit**, and **Linux Perf** to profile performance across memory tiers.
- *Developing* a performance estimation model to evaluate memory tiering strategies (TPP, Hemem, Chrono) for optimal data placement across memory hierarchies.
- *Building* a **Rust**-based testbed to emulate a multi-tenant cloud environment, enabling evaluation of distributed resource allocation strategies.
- *Profiling and analyzing* performance of programmable network switch code; implemented batch processing in **C** to boost packet throughput by up to **12**×.

Software Engineering Intern, CDN77 – Prague, Czech Republic (May 2023 – Aug 2023)

- Built and optimized a video streaming stack using **Rust/C++**, improving performance of the edge nodes by **15%**
- Implemented a caching system at the network edge to enable efficient stream multiplexing, improving throughput and reducing latency for live video.
- Contributed to designing an improved network topology for content delivery, enhancing scalability of the CDN infrastructure.

Research Assistant (Machine Learning), Yale-NUS College – Singapore (Jan 2023 – Jun 2023)

- Developed and evaluated multiple machine learning models in **Python** to detect *liveness* in cyclic **SDF graphs**, classifying them based on accuracy, recall and perplexity
- Created a synthetic dataset generator for SDF graphs and built a test suite for the **Kiter** framework, increasing code coverage by 20%..

Software Engineering Intern, Upskills – Singapore (Apr 2021 – Aug 2021)

- Developed and deployed an internal licensing server (**Python + Docker**) for all software products, replacing manual license management for the entire company and eliminating associated errors and delays.
- Implemented comprehensive unit and API tests in **TypeScript** to ensure robust functionality and reduce deployment issues across the product suite.

Open Source

- **Dailies**: Daily journaling in plain **Markdown**, also available as a **Neovim** plugin
- **Detypstify:** Developed a **WebAssembly**-based OCR tool in **Rust** for the **Typst** typesetting language, enabling automatic generation of markup code for mathematical formulas.
- **Chorey:** Created a personal time-management mobile application in **Kotlin** (**Android**), implementing task scheduling, reminders, and habit-tracking features.
- **Dotfiles (Nix):** Configured a reproducible development environment using **Nix**, automating the setup of development tools and environments across systems.
- **Burn (Rust DL Framework):** Contributed to the open-source ***Burn*** deep learning framework by extending its **ONNX** integration with 9 new operator implementations, improving model compatibility with exported neural network models.
- **Nixpkgs:** Maintainer – **Dailies**

Certifications

- **Linux Foundation:** *Introduction to Linux*; *Introduction to Cloud Infrastructure Technologies*
- **UC Berkeley (edX):** *Bitcoin and Cryptocurrencies*