William B. Yager

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github.com/wyager

Work Experience

[redacted] – *Software Engineer* CT, NYC, MT (May 2021 - Present)

- Special tech projects group ("[redacted] X")
- Designed, specced, and built the firm's internal feature flag system ("Gatekeeper"). Lead team of 2 developers. Widely used across entire firm in tech, trading, post-trade, etc.
- Designed, specced, and built the firm's version tracking and release management system ("Deployments"). Lead team of 4 developers. Widely used across the firm in tech, trading, post-trade, etc.
- As spinoff of above, created "Log Server", which is used by many critical firm services for storage, real-time monitoring, and long-term retrieval of logs.
- Designed, specced, and built the firm's real-time config management system ("Fast Properties"). Widely used across the firm in tech, trading, post-trade, etc.
- Designed, specced, and built "Log Warehouse", an aggressively cost-optimized log ingestion/storage/search system. Lead team of 2. Saves the firm 7 figures/yr over previous off-the-shelf solutions.

Jane Street Capital – *Software Engineer* NYC & Hong Kong (Aug. 2017 - Apr. 2021)

- Managed most of the firm's databases (Postgres, critical infra used for tech, trading, and support functions)
- Security infrastructure (password management systems, Kerberos infrastructure)
- Post-trade data ingestion and analysis infrastructure (Position tracking, PnL, Risk, etc.)
- Data storage and network infrastructure (DNS, ZFS storage infra, etc.)

Raizen Group – *Undergraduate Researcher* Austin, TX (Feb - Dec 2016)

- Nanostructure field ionization, ion microscopy
- Laboratory apparatus machining, electronics design, circuit fabrication

Palantir – *Software Engineer Intern* Palo Alto, CA (May - Aug. 2016)

- Front-end data visualization, back-end data analysis for industrial security data

Dropbox – *Security Engineer Intern* San Francisco, CA (May - Aug. 2015)

- Certificate management, TLS support for infrastructure

Bloomberg LP, CTO Office – *Security Engineer Intern* New York City, NY (May - Aug. 2014)

- Embedded systems cryptography/security (In-house real-time OS dev and hardware dev for B-Unit and Keyboard)
- Authentication infrastructure (asymmetric cryptosystems)

Endgame Systems – *Embedded Security Engineer Intern* San Antonio, TX (May - Aug. 2012 & 2013)

- Embedded systems reverse engineering, vulnerability analysis, fuzzing, exploit development

Professional Background

Computer Programming

- Very familiar: Haskell, OCaml, Rust, and Python
- Somewhat familiar: Coq, C, C++, Java, etc.
- Automata Theory, Formal Language Theory, Type Theory

Computer Security

- Reverse engineering (hardware and software), secure-by-construction design, security proofs, cryptosystems

Electronic Systems Design

- Circuit design, power management, rapid prototyping, FPGA development (VHDL, Verilog, Clash)

Hardware Fabrication

- Machining (lathe, mill, CNC, etc.), additive manufacturing, MIG/TIG

Physics Research

- Experiment design, physical simulation, mathematical modeling

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Some Personal Projects Of Note

MicroMechBoard yager.io/keyboard/keyboard.html

- A mechanical keyboard I designed and built. C/C++ & EAGLE.
- Published in EE Times and featured on Hackaday.

Neks github.com/wyager/Neks

- A fast and concurrent networked key/value server written in Haskell.

HaSKI yager.io/HaSKI/HaSKI.html

- FPGA-based SKI combinator calculus evaluator. Haskell/Clash + Verilog.

LEDStrip music visualizer yager.io/LEDStrip/LED.html

- DSP pipeline written in Python with Numpy. C LED control firmware.

Nixie Tube Music Visualizer yager.io/vumeter/vu.html

- KiCad, FreeCAD, Embedded Rust.

zfs-backup github.com/wyager/zfs-backup

- Tool for backing up and rotating ZFS snapshots across systems. Haskell.

Education

University of Texas at Austin — Grad. May 2017
Bachelor of Science in Computer Science — Mathematics & Physics Minors
Turing Scholars Computer Science Honors Program — 3.7 GPA