



Jakub Klapacz

Senior Software Engineer

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- English, Polish



BACKGROUND

ABOUT

I'm a senior software engineer with a background in artificial intelligence and big data. I wish to work on data-driven systems with an uncompromising focus on performance (application-level as well as developer-experience).

Having worked at a number of startups I feel very comfortable amidst the chaos of a high-growth startup; the insights I bring from witnessing what happens when a tech startup takes off can be very valuable in helping avoid expensive mistakes.

I have created applications from the ground up, broken apart legacy monolithic systems into microservices, created and maintained CI/CD pipelines, mentored and onboarded team-members and served as the subject matter expert on a number of (legacy) on-premise systems... at my core I am a technologist who strongly believes in automating what can be automated and am comfortable in almost any technical context.

My recent focus has turned towards working on tools which improve developer productivity and the developer experience and I am excited about the idea of utilizing AI/ML to improve the way developers can write code.

WORK EXPERIENCE

Senior Software Engineer, Pindrop

May, 2020 - Present

Pindrop applies cutting edge artificial intelligence and machine learning techniques in order to bring security, identity, and trust to every voice interaction.

Now a late-stage startup, when I joined the company was going through a period of exponential growth. In a relatively short period of time I had been exposed to many layers of the application stack and have gained significant experience in many aspects of software engineering.

The needs of working at such a startup have exposed me to non-trivial experience in many software engineering topics including: data-engineering, cli development, library development, tooling improvements, analytics, distributed applications, ci/cd, build tooling, sql (database) optimizations, and much more.

Recent Highlights:

- Architected and implemented a framework built on top of AWS Lambda and Terraform allowing for programmatic management of internal platforms
[kubernetes, rds, terraform, aws lambda]
- Worked with internal support team to design and implemented a process to automatically migrate customers into our cloud environment.
- Created developer tooling to spin up full production environments using firecracker virtual machines enabling a deployment process which has decreased from ~10 minutes to ~30 seconds
- Discovered significant cost saving opportunities by analyzing a complex build system and designing an alternative process to reduce development costs by over \$100K yearly. [esbuild, snowpack, deno, node.js]
- Implemented an alternate build system for a large production-critical react application using esbuild instead of webpack. Eliminated hundreds of npm dependencies in the process and reduced the build duration by over 99% (from > 7 minutes to < 6 seconds!)

Software Engineer II, Pindrop

Apr, 2018 - May, 2020 2 years 1 month

- Overhauled a monolithic legacy application into a modular React-based architecture resulting in over 85% code coverage and a 87% decrease in build time.
- Programmed a performance testing utility which could simulate phone call data at a rate of over 2 billion calls a year.
[Ruby, Rails, Bash]
- Maintained performance critical code and implemented bottleneck-optimizations in a distributed high-performance application.
[Ruby, Rails, Typescript, Python, Go]
- Pushed for and executed an initiative to improve automated code linting in a legacy application. Oversaw a 93% reduction of lint warnings and errors.
[Rubocop, Ruby, Rails]
- Designed the architecture for a design system of reusable components.
[React, Javascript, Typescript, Rollup]
- Created a framework for building a unified UI which relied on GraphQL to allow for a modular system of backend/frontend interaction.
[React, GraphQL, Apollo, JavaScript, Typescript]
- Led application development team, provided subject matter expertise, and collaborated with other teams to build features which closed a multi-million dollar contract on time.

Software Engineer (Backend), Pindrop

Jun, 2017 - Apr, 2018 10 months

- Improved data processing algorithms to decrease computation time by over 98% (from 218s to 3.5s).
[SQL, Performance]
- Designed and implemented continuous integration pipeline to improve efficiency of build process decreasing build time by 80% (from 25 min to < 5).
[Ruby, CI/CD, Bash, DevEx]
- Worked with multiple stakeholders to determine application requirements and implemented custom internal configuration management software.
[React, Redux, Javascript, Flow.js]
- Architected and implemented a reporting application capable of performing complex queries over vast datasets containing data about hundreds of millions of phone calls a year.
[Ruby, Rails, Data Warehousing, Adhoc Reporting, Performance]

Teacher's Assistant - Computer Security, University of Illinois at Urbana-Champaign

Dec, 2016 - May, 2017 5 months

- Helped arrange lab activities to strengthen pragmatic cybersecurity skills.
- Managed grading and planning of lab sessions.

Software Engineer (Intern), Networked Insights

May, 2016 - Sep, 2016 4 months

- Studied an existing architecture and created a drop-in replacement for a data collection service intended to replace a soon-to-be-deprecated API.
[Java, Big Data, Data Firehose]
- Refactored data collector API, identified inefficiencies, and improved performance by over 3x.
[Optimization, Performance]
- Migrated a polling approach to a pub-sub architecture bringing latency of realtime social media data to a consistent level.

Software Engineer (Intern), First Trust

May, 2015 - Sep, 2015 4 months

First Trust is a financial services company established in 1991 to offer trusted investment advice and services.

This was a valuable internship because I was able to experience a lot of technology which went parallel to the eventual industry standard (think mercurial vs git).

- Developed an app to maintain FTP credentials
- Automated testing FTP credentials, purging invalid configs, and detecting missing configuration values.

PROJECTS EXPERIENCE

Cloud Migration Toolkit, Pindrop

Sep, 2020 - May, 2021 7 months

Internal library and CLI application for automating migration from an on-premise system to a system hosted on AWS and kubernetes.

- Python, Terraform, Kubernetes, Node, AWS/S3, AWS/SSM, AWS/RDS, AWS/Lambda, AWS/Networking / Security Groups
- Created a framework which provides a modular way to collect, transform, and transport data (including configurations and trained ML models) between different systems and architectures.
- Utilized Terraform to automate creation of infrastructure but also allowed for the migration pipeline to utilize existing (and externally managed) AWS resources.

Parallel Make, UIUC

Sep, 2015 - Oct, 2015 1 month

Reverse-engineered gnu-make

- Implemented topological sort dependency resolution algorithm to efficiently parallelize tasks

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Memory Allocator, UIUC

Oct, 2015 - Nov, 2015 1 month

Designed and implemented an alternate implementation of the malloc() function.

- Created a dynamic memory allocation strategy to vary the size of memory based on application need
- Achieved performance 15% faster than that of glibc



SKILLS

I use this enough that I've read through the inner workings

Bash SQL Ruby Python Javascript Typescript Deno

Full-stack Development

Javascript Typescript React/Redux node.js Ruby Rails Go Python

UI / UX Tooling

webpack esbuild snowpack bundler CI/CD automation

DevOps

terraform kubernetes docker podman containerization cli-development

Comfortable, just let me check the docs

Go Nix/NixOS

I've used this to make non-trivial programs

Rust Elixir C C++ Haskell

I've dabbled but am curious

Crystal Julia



EDUCATION

Computer Science, Bachelor of Science, University of Illinois at Urbana-Champaign

Aug, 2013 - Aug, 2017

Algorithms (Random and Probabalistic) Algorithms and Models of Computation Artificial Intelligence Numerical Methods
Computer Architecture Data Mining Database Systems Statistics and Probability Cybersecurity



INTERESTS

Animals

My Dog Malina

