

# Arnav Jindal

Portfolio: [arnavjindal.xyz](https://arnavjindal.xyz)  
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## EDUCATION

- Duke University** Durham, NC
  - Bachelor of Science - Computer Science, Economics and Journalism* *August 2022 - May 2026*
  - Relevant Courses* Data Structures and Algorithms, Database Systems, Computer Architecture, Discrete Math, Microeconomics, Macroeconomics, Multivariable Calculus, Linear Algebra

## SKILLS

- Languages:** Python, Rust, Typescript, JavaScript, SQL, Bash, Deno, MIPS
- Libraries/Frameworks:** Next.js, Node.js, Hugo, React, Flask, FastApi, Actix, Express.js, PostgreSQL, Redis, MongoDB
- Tools/Platforms:** Git, Jest, Webpack, Heroku, AWS, GCP, Docker, Kubernetes, Cloudflare, Vercel, Grafana, Prometheus, RPC, Langchain, Vector Stores

## PROFESSIONAL EXPERIENCE

- TrendUp AI (YCOMB 2023)** Remote
  - Software Engineering Intern - Full Stack* *June 2023 - August 2023*
    - Backend AI Engineering:** Programmed vector stores to scrape and add datasets for chatGPT querying via APIs.
    - Building Frontend:** Developed user flows to create and post content powered by TrendUp's AI tools.
    - Data Pipelines:** Deployed Backend Pipelines to ingest and process data in the background reducing compute costs by 30% and expanding data stored by 4x.
- Duke University Department of Computer Science** Durham, NC
  - Research Assistant - Computer Systems* *June 2023 - August 2023*
    - Computer Systems Research:** Developed mRPC with Dr Matthew Lentz and Dr Danyang Zhuo, a managed and more efficient gRPC alternative.
    - Building Frontend:** Engineered a user-friendly Python frontend using pyo3 and Rust FFI; Wrote documentation with examples for developers.
    - Enhanced Performance:** Optimized mRPC with new frontend that had 400% performance improvement
- Reachbest** Remote
  - Software Development Intern - Full Stack* *Jun 2022 - August 2022*
    - College Admissions Webapp:** Created dashboard for students using typescript, next.js and MongoDB to visualize their profile. Improved graphs helped boost customer satisfaction.
    - DevOps:** Automated CI pipelines and deployment of web apps to production to cut deployment times by 50%.
- IBM** Bangalore, India
  - Research Intern - Artificial Intelligence* *Mar 2021 - Apr 2022*
    - Created AI-powered counselling service:** Integrated IBM technology to create mental health counselling chatbot for the NGO Emancipation to assist victims of human trafficking. Bot helped 9000+ children.
    - Designed Website to deploy solution:** Website made using tailwind, HTML and javascript to embed counselling service. Performant website to load on weaker internet connections.
- Znotes** Remote
  - Software Engineering Intern - Full Stack* *Mar 2020 - August 2021*
    - Python Community Moderation tool:** Purpose-built discord bot in Python for moderation, role assignments, community metrics and website integration to boost user engagement by 30%.
    - Web Development:** Redesigned react components with material-ui and react.js for website redesign.

## PROJECTS

- Dagpi - full stack SaaS platform for image manipulation with monetization:** Webapp featuring next.js frontend and admin API backend in express.js with typescript. Image manipulation microservice in Python fast API, and auth/metric microservices in Actix rust. All networked together with docker and nginx. Monitored with Grafana and Prometheus. PostgreSQL and TimescaleDb databases with aws glacier automated backups. Integrates with Stripe and PayPal payment gateways for subscriptions.
- Polaroid - image manipulation library in python:** Various rust libraries integrated to python with FFI. Features CI to build cross-platform wheels using maturin. Core FFI done with pyo3 and features stubs and automatic documentation generation.
- Dagbot - full-stack community engagement tool:** Built on discord's WebSocket and HTTP APIs, this tool responds to user interaction and uses several APIs. Python engagement tool is connected to postgresSQL and frontend microservice by HTTP. Frontend microservice is express typescript with react frontend and MongoDB database. Deployed with kubernetes
- Esoteric Languages - niche programming languages:** Built 2 esoteric programming languages. Udymts features a rust-based cli and compiler that turns udymts files into Python to execute. PokeType is an expression evaluation language built with rply and features lexical analysis, tokenization, compilation, interpretation and more.
- Image Uploader - full-stack app to serve images :** Built with a rust backend, it allows users to upload images via HTTP, Form API or through a UX made of HTML, CSS and js templates rendered by a rust backend. It also features user authentication, image compression and compiled binaries for various target operating systems.