NICK YOUNG

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> EDUCATION

- **Brown University –** *ScB. in Mathematics and Computer Science [GPA: 3.96/4.00]* *Graduating May 2023*
  > *Relevant coursework:* Massive Time Series Databases, Database Management Systems, Distributed Systems, Computer Networking, Programming Languages, Compilers, Graphics, Formal Methods, Probabilistic Methods, Number Theory.

> EXPERIENCE

- **Stripe –** *Software Engineering Intern (DocDB Fleet Management Team) – Seattle, WA* *June – August 2022*
  > Designed and implemented a **distributed Mongo load simulation framework** in **Go**, supporting up to **100,000 writes/sec**.
  > Made an engine to **generate user-specified read and write requests** to evaluate database performance and reliability.
  > Spearheaded **cross-team AWS host management migration**, deprecating thousands of lines of legacy Ruby code.

- **Bloomberg LP –** *Software Engineering Intern (DevX Team) – New York, NY (Remote)* *June – August 2021*
  > Deployed an **adaptive connection pool** in **Python**, reducing new connections by **98%** and lowering latency by **50%**.
  > Used internal **telemetry** tools to track connection pool performance; exposed data through 4 unique **Grafana** dashboards.
  > Delivered a **React UI** for users to interact with the DevX Policy Engine and improved **SonarQube** static analysis tooling.

- **Stochastic AI –** *Software Engineering Intern – Cambridge, MA (Remote)* *June – August 2020*
  > Spearheaded the web team and set up **CI/CD** for the frontend and backend with **Github Actions**, **GCP**, and **Netlify**.
  > Engineered the backend microservices architecture from scratch using **GraphQL**, **Docker**, **Rust**, **Python**, and **Javascript**.

- **Stylindex –** *Full Stack Engineering Intern – Los Angeles, CA (Remote)* *June – August 2020*
  > Developed an automated **GraphQL** emailing microservice using **Rust**, eradicating the need to manually send email alerts.
  > Revamped the internal analytics system by tracking API activity with **Rust** and **Python** and building new charts in **React**.

> LEADERSHIP

- **Database Management Systems –** *Head Teaching Assistant* *Fall 2021*
  > Revamped course to operate in **Go**. Wrote reference implementations, autograders, and handouts for 8 assignments on the following: **SQL**, **paging**, **hash tables**, **b+tree indices**, **query processing**, **query optimization**, **concurrency**, and **recovery**.
  > Drafted conceptual assignments, coordinated the TA team, created the course website, and led all course logistics.

- **Adversarial Thinking in CS Education –** *Research Assistant* *Spring 2021*
  > Published a paper on **adversarial thinking** in 100+ beginner computer science students in the **ACM ICER 2021** conference.
  > Analyzed student responses to 300+ ethics assignments using **intercoder reliability** with Professor Shriram Krishnamurthi.

- **Full Stack at Brown –** *President* *Winter 2020 – Present*
  > Led a web development club of **250+ members** and **50+ client-facing projects**. Oversaw operation of all project groups.
  > Organized and conducted a web bootcamp to teach **HTML**, **CSS**, **JS**, **React**, and **SQL** to new members every semester.

> PROJECTS

- **TRustDB** *[n-young/trustdb]* *April 2021*
  > Highly performant **time-series database** written in **Rust**. Optimized for writing and querying of high-cardinality data.
  > Pioneered **boolean logic-based query optimization** to accelerate conjunctive normal form queries by up to 1000%.
  > Leveraged **finite-state transducer-based index compression** to keep log indexes both time- and space-efficient.

- **NetStack** *[n-young/netstack]* *April 2022*
  > Minimum viable **RFC-compliant** implementation of **IP**, **TCP**, and **DNS** written in **Go** as a proof-of-concept.
  > Supports **traceroute**, **route aggregation**, **recursive IP resolution**, and **route caching** on top of regular functionality.

- **Goo** *[n-young/goo]* *May 2021*
  > Performant and minimal **YAML**- and **Markdown**-based **static site generator** built in **Go** as a replacement to Hugo.
  > Authored support for template partials, data injection, Markdown-to-HTML compilation, inline LaTeX, and :joy:-like emojis.

- **OxySAT** *[n-young/oxysat]* *March 2021*
  > DPLL-powered **SAT solver** with custom heuristics to optimize satisfiability search, made in **Rust**.
  > Tested using an automated oracle built in **Python**. Compatible as a backend for the **Forge** model-checking language.