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## Interests

- Making complexity approachable
  - Type theory, static analysis, functional programming, formal verification, technical writing
  - Reproducible research, builds, and deployments
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## Qualifications

- Expertise with TypeScript, Node.js, Unix, Docker, Bash, GNU Make, git, Lisp, L<sup>A</sup>T<sub>E</sub>X
  - Familiar with Rust, Kubernetes, AWS, Terraform, NoSQL, Go, C/C++, Python, Ruby, Haskell, TLA+, ACL2
  - Looking forward to deeper mastery of Nix
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## Recent Work Experience

### **BitGo – Engineering Manager, Internal Tools** (2021 - Today)

- Created microservices build system, scaling 30 engineers to 250, 5 services to 72, reducing build time 98.5%
- Created api-ts for type- and runtime- safe APIs, reducing production issues by 97% over 1 year

### **BitGo – Senior Software Engineer, Prime** (2020 - 2021)

- Created risk-management engine for margin trading in Go, increasing trade volume 100x
- Integrated trade engine with 4 add'l liquidity providers, increasing limit order-book depth 68% over 100 bps
- Introduced functional programming in TypeScript (fp-ts), now used on 6 teams

### **Strong Roots Capital – Chief Technology Officer, Founder** (2018 - Today)

- Created platform for quantitative research and execution of systematic trading strategies
- Automated regime-dependent strategies for providing liquidity, trend-following, and mean-reversion
- TypeScript/Node.js microservice architecture on AWS using immutable infrastructure-as-code

### **ShoreTel – Embedded Software Engineer** (2016 - 2018)

- Architected next-gen embedded C++ phone firmware, reducing race conditions by 100%
- Created custom Linux distribution for in-house hardware with yocto, eliminating 1-day exploits
- Created on-premise GitLab & CI cluster with ansible & docker, reducing CI execution time by 96%

### **IBM – Cloud Infrastructure Engineer** (2015 - 2016)

- Developed public API for customers to provision and manage OpenStack cloud resources
- Scaled with 60% customer growth and 400% increase in managed servers, using Python and OpenStack

### **Intel – Pre and Post Silicon Validation Engineer** (2014 - 2015)

- Created signal analysis tool for 3<sup>rd</sup> party DHCP RTL in Lisp, accelerating integration timeline by 15%

### **Centaur Technology – Design & Performance Verification Engineer** (2013 - 2014)

- Invariant-based verification of multi-core PSE-36/PAE caching over 3 major architecture releases in Ruby
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## Educational History

- **University of Texas** Bachelor of Science in ECE (Computer Architecture and Embedded Systems), May 2016