

Chris Arnesen

Oakland, California

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Experience

TRADEWEB • OCTOBER 2020 - PRESENT

DIRECTOR, TECHNOLOGY DEVELOPMENT • DECEMBER 2022 - PRESENT

Promoted from VP. Continued architecting GraphQL APIs for anonymous digital financial exchanges. Managing project timelines and leading software development. Contributing to core software libraries and shared infrastructure automation. (Node.js, TypeScript, Docker, Ansible).

VICE PRESIDENT, TECHNOLOGY DEVELOPMENT • OCTOBER 2020 - DECEMBER 2022

Architected and built GraphQL APIs for anonymous digital financial exchanges. Managed project timelines and led software development. Contributed to core software libraries and shared infrastructure automation. (Node.js, TypeScript, Docker, Ansible).

HEAD COACH, GIRLS BASKETBALL • **ST. PAUL ACADEMY** • OCTOBER 2021 - FEBRUARY 2023

Head coach for middle school girls basketball: 6th grade team and 7th/8th grade team. Two seasons (2021-22 and 2022-23).

STAFF SOFTWARE ENGINEER, INFRASTRUCTURE • **FLOCK FREIGHT** • SEPTEMBER 2019 - OCTOBER 2020

Managed cloud computing resources and application technology (Google Cloud Platform, MySQL, Docker, Kubernetes, Python, Node.js, Terraform, Java). Provided architectural guidance and oversight. Remedied production outages (Datadog).

SENIOR WEB DEVELOPER • **ALWAYS.AI** • JANUARY 2019 - OCTOBER 2019

Designed and built a fledgling computer-vision startup's software-as-a-service (SaaS) platform and command-line interface (CLI) (Node.js, TypeScript, Postgres, AWS Lambda, Docker). Implemented user-facing web browser applications (React, Next.js).

LEAD FRONT-END ENGINEER (CONTRACT) • **AMERIPRISE FINANCIAL** • SEPTEMBER 2017 - JULY 2018

Led efforts to modernize and standardize web browser development across the enterprise (React, Node.js, TypeScript, npm, create-react-app).

SENIOR SOFTWARE ENGINEER (CONTRACT) • **YA ENGAGE** • MARCH 2017 - SEPTEMBER 2017

Automated the provisioning of cloud resources and deployment of web applications. Developed multi-tenant web applications (Node.js, Postgres, AWS, React, AngularJS).

SENIOR SOFTWARE ENGINEER • **GLOBAL TRAFFIC TECHNOLOGIES** • JANUARY 2016 - MARCH 2017

Led a nascent web engineering team. Evangelized adoption of engineering best practices. Built web services running in the cloud and embedded on city buses (Node.js, MongoDB). Designed and built browser-based real-time admin interfaces (React, WebSockets).

LEAD DEVOPS ENGINEER • **STORYCLOUD** • FEBRUARY 2014 - DECEMBER 2014

Configured cloud computing resources for a Silicon Valley startup (AWS, Hadoop, Elasticache, Kafka). Standardized local development and cloud deployment environments.

SOFTWARE CONSULTANT • AB INITIO SOFTWARE • MARCH 2009 - DECEMBER 2013

Provided support and on-site technical assistance, training, and application development for high-value enterprise customers. Built mission-critical high-volume data processing applications, batch (ETL) and real-time. Invented a novel data differencing algorithm.

POSTDOCTORAL RESEARCHER • CARNEGIE MELLON UNIVERSITY • AUGUST 2007 - JANUARY 2009

Calculated Higgs boson production rates at the Large Hadron Collider (LHC) (quantum field theory, Mathematica, Fortran).

COACH AND SUBSTITUTE TEACHER • INTERNATIONAL SCHOOL OF MINNESOTA • AUGUST 2001 - JUNE 2002

Head Coach for 5th and 6th grade boys basketball team. Substitute teacher (PE, Science).

Education

PH.D. PHYSICS • MASSACHUSETTS INSTITUTE OF TECHNOLOGY • AUGUST 2002 - JUNE 2007

Thesis: Model-independent approaches to QCD and B decays.

CALIFORNIA INSTITUTE OF TECHNOLOGY • AUGUST 1997 - JUNE 2001

B.S. PHYSICS • AUGUST 1997 - JUNE 2001

SHOOTING GUARD, MEN'S BASKETBALL (NCAA D3) • AUGUST 1997 - JUNE 2001

Four-year starter for Caltech intercollegiate basketball team. Team captain (2001). Defensive Player of the Year (2000). Concurrent with B.S. Physics.

HIGH SCHOOL • INTERNATIONAL SCHOOL OF MINNESOTA • AUGUST 1993 - JUNE 1997

Graduated as valedictorian in 1997. Located in Eden Prairie, MN.

Skills

Web engineering, DevOps, technical writing, application architecture, distributed data processing, consulting, security, configuration management, automation, testing

Languages: TypeScript, JavaScript, Python, SQL, HTML, CSS, Bash, Java

Web: Node.js, React, Next.js, GraphQL, Express, Koa, HTTP/HTTPS, WebSockets

Cloud: Amazon Web Services (AWS), Google Cloud Platform (GCP)

Infrastructure: Terraform, Ansible, Kubernetes, Docker, Helm, Argo

Databases: PostgreSQL, MySQL, MongoDB, Redis

AI/ML: Claude API, OpenAI API, embeddings, pgvector, LLM-assisted development

Other: Git, GitHub Actions, Google Pub/Sub, Kafka, Datadog, Linux, macOS

Math & physics: linear algebra, quantum mechanics, quantum field theory, statistics, calculus, complex analysis