CHRISTOPH CLARK

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Traverse City, MI ~ Remote
720-217-8492

Lead full-stack and data visualization engineer with over 25 years building interactive tools for scientists and the public: NASA's Cassini mission to Saturn (SSI), genome-wide association studies (LocusZoom.js, U-M), and NSF's continent-scale ecological observatory (NEON). Seeking remote roles where software serves science.

EXPERIENCE

Lead Data Visualization Engineer ~ *April 2021 - Present*
Interos, Inc. (interos.ai) ~ Remote

Full stack engineering of high-performance analytics application modeling global supply chain risk.

- Architected and developed React/TypeScript frontend with multiple interactive data visualizations for hundreds of millions of companies and billions of relationships (d3 and MapLibre, design token management through Figma, Tailwind, next.js)
- Architected and developed API service layer (REST and GraphQL in Python / FastAPI)
- Developed ETL pipelines and data projections in Snowflake and PostgreSQL including deep research into 50% reductions in 6-figure monthly compute costs while improving performance and supporting new features
- Technical mentorship of engineers throughout the stack including project management, product ownership, technical hiring/recruiting, onboarding, and developer experience improvement
- Extensive use of managed agentic development with Claude / Cursor, development and deployment of custom agents for workflow and code review automation

Independent Web Developer ~ *Continuous Since 2005*

Personal projects for science, education, and free online services

- Nuclides.org ~ Open source interactive d3 visualization of the periodic table of elements and chart of nuclides
- EclipseTracks.org ~ Open source interactive visualization of solar eclipse events with CesiumJS
- FamilyGiftRegistry.net ~ Free private registry for families to organize wish lists and gift-giving events serving thousands of users for over 20 years

Senior Software / Data Visualization Engineer ~ *May 2019 - April 2021*
National Ecological Observatory Network (neonscience.org) ~ Boulder, CO

Front end development for visualization of and general access to petabytes of public data for the continent-scale 30-year NSF-funded ecological study.

- Developed data portal for public access to petabytes of ecological data (React, TypeScript, d3, Leaflet)
- Built and deployed interactive open-source visualizations for geospatial and time series data
- Developed data management and access backend with Java / Spring Boot
- Close collaboration with ecological scientists and researchers for product ownership

Senior Data Visualization Engineer ~ *Feb. 2017 - May 2019*
Deepfield Networks / Nokia (deepfield.com) ~ Ann Arbor, MI

Full stack web development with a focus on data visualization, code base modernization, and application architecture for a petabyte-per-second-scale network infrastructure analytics application.

- Modernized developer culture by way of code review, automated testing, and data modeling
- Led transition of front end platform from custom JS to standards-based React + Bootstrap
- Dev team leadership, mentoring, active recruiting, on-boarding, and agile process management

Senior Application Programmer / Analyst ~ *Jul. 2015 - Feb.2017 Full Time; Feb. 2017 - Jan. 2018 Part Time*
Center for Statistical Genetics, University of Michigan (sph.umich.edu) ~ Ann Arbor, MI

Full stack web development including data visualization, security, scalability, and open source community management. Mentored technical staff and biostatistics graduate students. Key projects:

- Developed and managed LocusZoom.js (my.locuszoom.org) - open source D3.js visualization library for genome-wide association studies used by thousands of researchers world-wide
- Developed and managed Genes for Good (genesforgood.org) - 82,000+ participant genetic research study built with PHP/MySQL and administered through Facebook; analyzed over 27,000 human genomes
- Trained and mentored biostatistics researchers on software development best practices

Director, Software Development & Information Technology ~ *Aug. 2006 - Mar. 2015*
SparkFun Electronics, Inc. (sparkfun.com) ~ Boulder, CO

Built Dev/IT department from inception to staff of 15 (developers, sysadmins, and data analysts). Managed annual budget of $1.7M. Architected development of eCommerce and ERP platform.

- Directly contributed to growth of annual revenue from $3.8M in 2007 to $32M in 2014
- Architected ERP system and eCommerce front end (React, PHP, PostgreSQL)
- Designed network and security infrastructure for new 80,000 sqft office & manufacturing space
- Managed various open source repositories and the OSS presence of the entire org
- Presented talks on technology, business practices, and open source methodologies at conferences around the world

Image Processor / Web Developer ~ *April 2004 - April 2007*
Space Science Institute / Cassini Mission to Saturn (spacescience.org) ~ Boulder, CO

Processed raw data and developed related tooling for the Cassini mission to Saturn.

- Integrated content pipeline with NASA/JPL remote databases (Apache, MySQL, PHP)
- Built a science-grade web-based image processing UI using Interactive Data Language (IDL)
- Built and managed science team website and image product catalog
- Processed hundreds of image and video products for the public from raw spacecraft data

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SKILLS/TECH

JavaScript: TypeScript, React (Redux, Next.js), React Native, ES5/ES6+, Angular/AngularJS, Vue.js, Handlebars/Mustache templating, Jest, Mocha, Jasmine, Puppeteer, Cypress, D3.js, Mapbox GL JS, MapLibre GL JS, Leaflet, CesiumJS, interactive GIS patterns, interactive data visualization, HTML5

Backend: Python, Pip, Poetry, FastAPI, Alembic, PHP, Laravel, Symfony, Java, Spring Boot, Auth0, Cognito, Dapr, Apache, IDL, MVC patterns, MVVM patterns

Databases: MySQL, MariaDB, PostgreSQL, Snowflake, Databricks, DynamoDB, Neptune, BTrDB, columnar databases, graph databases, vector databases, ETL patterns, compute cost management

Design Systems: Design token pipelines, Figma design systems, CI/CD for component libraries, Storybook, reusable component architecture, Web Components, micro-frontend (MFE) architecture

Leadership: Multi-continent team leadership, personnel management, hiring, goal setting, mentoring, career development, team building and performance/cohesion, sprint facilitation, roadmap planning, resource planning, budgeting, public speaking

CSS / Styling: CSS3, SCSS, LESS, PostCSS, CSS Modules, BEM, OOCSS, SMACSS, Tailwind, responsive/mobile-first, CSS animations, Bootstrap, Ant Design

Tooling & CI/CD: Webpack, Vite, Rollup, Gulp, Jenkins, Git, GitHub, NPM, NVM, Node.js, AWS, Docker, Pendo, ArgoCD

Process: Agile/Scrum, sprint ceremonies, release scoping and documentation, Jira, Confluence, cross-functional stakeholder communication, high-level technical assessment, technical debt management

UX & Design: Figma, Adobe Creative Suite, Sketch, Inkscape, wireframing, user testing basics, UX review and design vetting, accessibility

AI & Developer Workflows: Agentic AI, MCP server development, custom agent development and deployment, prompt engineering, developer workflow automation, AI coaching & enablement

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EDUCATION

University of Colorado at Boulder ~ *December 2007*
Bachelor of Arts, Mathematics ~ (Minor, Astronomy)
