Bernardo Villalba Cahue

Software Engineer | Data-Intensive Systems & FinTech

Minneapolis, MN | bernardo@bernardovc.dev
[LinkedIn (https://www.linkedin.com/in/bernardo-villalba-cahue/)](https://www.linkedin.com/in/bernardo-villalba-cahue/)
[Github (https://github.com/capatazche/)](https://github.com/capatazche/)
[Personal Website (https://bernardovc.dev/)](https://bernardovc.dev/)

Summary

Software Engineer specializing in data-intensive systems, full-stack applications, complex data pipelines, and modern cloud infrastructure.

Technical Skills

- **Languages**: Python, Kotlin, Java, TypeScript/JavaScript, Scala, SQL, Matlab
- **Cloud & DevOps**: AWS, Docker, Kubernetes, Terraform, Jenkins, Argo Workflows, Ansible, TeamCity, uDeploy, SBT
- **Data Science**: Pandas, NumPy, DuckDB, Scikit-learn, NLP
- **Backend**: Spring, Flask, PostgreSQL, Cassandra, Apache Storm, Jinja2
- **Frontend**: React, Angular/AngularJS, Bootstrap, Ui-Grid
- **Developer Tools**: Git, Github, Bitbucket, SVN, Jira, Pytest, Cypress, Salesforce, Intellij, Linux

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Experience

Co-Founder & Lead Software Engineer

Narranomics | Minneapolis, Minnesota, United States | May 2023 - Present

- Led the strategy and development of an AI-driven, sentiment-based financial futures trading strategy and presented it to prospective investors and key stakeholders.
- Used Python, Docker, and Kubernetes, to develop and deploy a recurrent automated job to scrape and ingest communications from the Federal Reserve.
- Owned the entirety of the frontend, including a specialized data labeling, data analysis, and system health applications as well as the Narranomics public website. These were developed with React and NextJS.
- Owned the backend and DBs supporting the data labeling and data analysis frontends. It is written in Kotlin and connected to a PostreSQL DB.
- Leveraged our auto-scaling Kubernetes cluster, Docker, and Argo-Workflows to design and implement a parallelized simulation framework in Python to backtest hundreds of thousands of trading strategy parameters, reducing the R&D cycle duration by over 90%.

Software Engineer, Science and Modeling

CIBO Technologies | Minneapolis, Minnesota, United States | June 2021 - May 2023

- Maintained and scaled a complex data processing pipeline to support the science and modeling

team's research and development efforts.
- Developed Python scripts to automate data tabulation and analysis, improving the efficiency of data preparation for modeling.
- Built and executed custom simulations using a variety of data inputs to deliver key modeling insights for external clients.

Full Stack Software Developer

CarVal Investors | Minneapolis, Minnesota, United States | June 2020 - May 2021

- Played a key role in a small agile team to migrate software development from a third-party vendor to an in-house team, improving project control and reducing costs.
- Contributed to the full product lifecycle and enhanced user experience, by managing product ownership, UX design, and full-stack software engineering.
- Developed, maintained, and strategically consolidated internal business and investment analysis applications.

Software Engineer

Virgin Pulse | Minneapolis, Minnesota, United States | January 2019 - June 2020

- Developed and maintained features for a complex rules engine that executed gamified rewards to nudge members towards healthier behaviors.
- Served as a key contributor on the team that built the company's live services coaching platform.
- Engineered solutions that incorporated third-party software, including Salesforce Health Cloud, into the core platform.

Technology Analyst (Software Engineer)

Deutsche Bank | Cary, North Carolina, United States | July 2016 - September 2017

- Implemented new features and documented code for DB Entitlements, the bank's largest internal authorization application.
- Developed a new UI for the Distressed Products Group to visualize and edit complex financial instruments.
- Automated the generation of three weekly reports for the trading team, saving approximately 9 person-hours per month.

Projects & Ventures

Narranomics - AI-Powered Market Analysis Platform (Founder & Researcher)

September 2018 - May 2023

- Led the technical development of a research project to predict financial market movements by analyzing sentiment in news articles, culminating in a successful funding round.
- Scaled the platform's architecture for advanced data processing, migrating the system from a local distributed computing cluster to a serverless model on AWS Lambda.
- Enhanced the core natural language processing (NLP) model by replacing the initial n-gram approach with a transformer-based architecture to improve accuracy.

Education

University College London

Master's degree, Cognitive and Decision Making Sciences (2017-2018)

University of Minnesota-Twin Cities

Bachelor's degree, Mathematics with a focus on Computer Applications (2012-2016)

Minor, Computer Science (2012-2016)

Additional Information

Languages: English (Native or Bilingual), Spanish (Native or Bilingual), French (Professional Working)

Publications: Predicting Phase Amplitude Coupling from UPDRS Scores (in patients with Parkinson's disease)

Certifications: Series 3