

Juan Camilo Narváez Tascón

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Professional Summary

Systems Engineering student and research assistant at AVISPA Research Group, with a strong foundation in data-intensive simulations, mathematical modeling, and computational methods. Professionally, I have led and developed full-stack software applications for academic and commercial entities, both independently and within teams, using modern frontend frameworks and scalable backend architectures. My work spans intelligent automation, data-driven systems, and robust web platforms built with Next.js, Convex, Clerk, and ShadCN UI, integrating authentication, payments, and modular design. While still early in my professional journey, I combine curiosity, adaptability, and initiative with solid software engineering skills and the ability to quickly embrace emerging technologies, including Model Context Protocol (MCP).

Education

Universidad del Valle, BSc in Systems Engineering 2021 – 2026

- Distinguished with Academic Stimulus Scholarships for consecutive terms (2021-2022, 2024-2025), awarded by Academic Vice-Rectorcy for outstanding academic performance
- **Key Coursework:**
 - *Mathematics:* Linear Algebra, Calculus, Probability, Statistics
 - *Computer Science:* Artificial Intelligence, Algorithm Analysis & Design, Parallel & Distributed Computing
 - *Software Engineering:* Software Architecture, Object-Oriented Programming, Database Systems, Software Development

Experience

Software Engineer, CPM Studio Jul 2025 – Present

- Led the design and development of software applications for both academic and commercial organizations.
- Implemented scalable architectures and modern technologies including Next.js, ShadCN, Convex, and Clerk.
- Integrated core features such as authentication, payments, and modular UI components into production-ready systems.

Freelance Software Engineer, Independent Projects 2023 – Present

- Delivered full-stack web applications for companies such as The Blinds Craft and Aneta Sports.
- Designed and deployed tailored platforms integrating business intelligence features to enhance decision-making.
- Provided end-to-end solutions, from frontend design to backend services, using TypeScript, Next.js, Convex, and Clerk.

Research Assistant, AVISPA Research Group – Universidad del Valle (in collaboration with École Polytechnique, CNRS, Université Sorbonne Paris Nord) May 2024 – Present

- Conduct research in data-intensive simulations and mathematical modeling.
- Develop and optimize Python-based computational pipelines leveraging advanced linear algebra, NumPy/SciPy and parallel computing techniques for high-performance analysis.
- Architect reproducible workflows for large-scale simulations using distributed computing frameworks and containerization (Docker, Kubernetes).

Administrative Monitor, Master's in Coding – Universidad del Valle Sept 2023 – Present

- Manage and optimize administrative processes through custom automation solutions and dynamic spreadsheets
- Lead communication and student support through official channels, handling admissions, enrollments, and general inquiries
- Develop and maintain program's web presence, coordinating with design and development teams

Mathematics Tutor, Tutor.com

Jan 2024 – May 2024

- Provided one-on-one tutoring in analytical skills and calculus
- Developed personalized learning strategies for students
- Maintained excellence in mathematical instruction

Technical Skills

Programming Languages: TypeScript, Python, Go, SQL

Frameworks & Libraries: Next.js, Astro, ShadCN, Convex, Clerk, Pandas, NumPy, Scikit-learn, TensorFlow, Seaborn, Matplotlib, Jupyter, XGBoost, PyTorch, SciPy

Tools & Technologies: Git, GitHub Actions, Docker, Kubernetes, Database Systems, Mathematica, MCP (Model Context Protocol)

Mathematics: Linear Algebra, Calculus, Probability, Statistics, Discrete Mathematics