Ashish Srivastava

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Education

B.S. in Chemical and Biological Engineering   **August 2019 – December 2023**
University of Colorado Boulder
GPA: 3.76   **Minors:** Computational Biology, Biomedical Engineering

Professional Summary

Engineer, data scientist, and builder working at the intersection of technical depth and human impact. Background in renewable plasma manufacturing, computational microfluidics research, and university teaching. Currently exploring AI safety and technical governance while expanding my knowledge toolkit every single day. Common thread: making complex things useful and accessible.

Core Competencies

Computing	Python, MATLAB, Fortran, VBA, Bash, SQL, JavaScript, AWS (S3, EC2, Lambda), HPC, Linux
Data Science	Dashboards, Pipeline Development, Time Series Analysis, Video Feed Analysis, Statistical Tests, JMP, MiniTab
Engineering	Statistical Process Control, Simulation, Heat Transfer, Fluid Mechanics, Plasma Chemistry, AVEVA PI
Research	Literature Review, Rapid Technical Onboarding, Design of Experiments
Communication	C-Suite Presentations, Data Visualization, Stakeholder Management, Technical Writing
Languages	English (Fluent), Hindi (Fluent), Spanish (Conversational), Korean (Conversational), Urdu, Telugu

Professional Experience

Lead Wizard, Founder   **August 2025 – Present**
Nomad Pedals, Denver, CO

- Founded boutique guitar effects pedal company specializing in handcrafted analog fuzz and distortion circuits
- Designed and built made-to-order, one-of-a-kind pedals featuring custom point-to-point soldered circuits (getting rid of the P and the B in PCB)
- Painted South Asian art-inspired enclosure designs, managing full product vision from circuit prototyping through direct sales

Founder   **July 2025 – Present**
Commonplace, Denver, CO

- Building a local-first personal knowledge management platform inspired by Renaissance commonplace books, combining the citation rigor of Zotero with modern PKM workflows like Obsidian
- Developed browser extension for web content collection with automatic metadata extraction and citation generation
- Developing Electron-based desktop app with local markdown/JSON storage, prioritizing user privacy and data ownership over cloud-dependent alternatives
- Designing content-extensible schema supporting diverse knowledge types: webpages, annotations, quotes, notes, and multimedia with bidirectionally linked graph-based visualization

Engineering Data Scientist and Carbon Black Product Quality SME   **May 2023 – March 2025**
Monolith (Renewable Hydrogen and Carbon Black Manufacturing), Denver, CO

- Collaborated with cross-functional stakeholders including capital markets, R&D, and process engineering teams to deliver data-driven insights using statistical analysis and cloud infrastructure
- Developed process-data and video-feed models and data pipelines for automating plasma-based hydrogen and carbon black manufacturing processes (Python, Plotly, AWS, and JMP statistical software)
- Built plasma torch camera feed computer vision model for automated quality control and predictive maintenance, reducing manual inspection time 90%
- Developed plasma torch voltage model for statistical process control, eliminating need for live reactor monitoring
- Synthesized PowerPoint templates and automated dashboards streamlining deliverables, developed internal Python libraries for processing and visualization that streamlined analytical workflows and reduced analysis time by 60%
- Subject Matter Expert (SME) for carbon black product quality, delivered biweekly presentations to C-suite (CEO, CTO, Manufacturing VP, Capital Markets) and operations synthesizing complex statistical investigations into actionable insights

Undergraduate Course Assistant and Lecturer   **January 2022 – December 2023**
University of Colorado Boulder, Boulder, CO

- Provided instructional support across five chemical engineering courses (Fluid Mechanics, Heat and Mass Transfer, Engineering Computing, Python for Chemical Engineers), including delivering lectures, recording review sessions, proctoring exams, and holding office hours for 200+ students
- Created and delivered undergraduate lectures on heat transfer topics (recorded sessions available at youtu.be/freI5xUWdOo), developed terminal interface training materials for engineering workflows
- Designed Python curriculum and automated grading infrastructure: built assignment auto-grading system using nbgrader to replace Excel/VBA workflows, wrote git/GitHub and PEP-8 training materials
- Recorded exam review screencasts that improved student performance by 20%, facilitated communication between students and faculty across multiple engineering departments

Undergraduate Research Assistant, Davis Group   **May 2021 – May 2023**
University of Colorado Boulder, Boulder, CO

- Co-authored publication in Cambridge Journal of Fluid Mechanics on droplet motion in rectangular channels
- Developed Fortran simulations for low-Re microfluidic system analysis, created Python-based computer vision software for experimental analysis at a 10x speedup from FIJI
- Designed and built experimental apparatus to validate computational predictions using dimensionless scaling, transitioned simulation workflow from single PC to CU Alpine and Summit Supercomputing clusters, wrote SLURM scripts
- Trained 6 researchers on computational methods and experimental analysis techniques

Technology Policy Intern   **June 2021 – August 2021**
Office of U.S. Senator Michael Bennet, Washington, D.C.

- Conducted desk research on nuclear/renewable energy and internet bots; presented findings to policy team
- Drafted policy memos synthesizing technical research into recommendations for legislative decision-makers

Conference Presentations

Experimental and Computational Analyses of Drop Motion in Straight Microchannels
National Conference for Undergraduate Research (NCUR), Eau Claire, WI, 2023

Experimental and Computational Analyses of Drop Motion in Straight Microchannels
Rocky Mountain Fluid Mechanics (RMFM), Boulder, CO, 2022

Numerical Simulation of Viscous Microdroplets Flowing Through Straight Microchannels
Rocky Mountain Fluid Mechanics (RMFM), Boulder, CO, 2021

Simulating Viscous Drops Flowing in Microchannels
CU Boulder SPUR, Boulder, CO, 2021

Publications

Motion of a Deformable Droplet in a Rectangular, Straight Channel
R. Chattopadhyay, A. Vepa, G. Roure, A. Srivastava, R. Davis
Journal of Fluid Mechanics, 2025

Experimental and Computational Analyses of Droplet Motion in Straight, Rectangular Microchannels
A. Srivastava, G. Roure, R. Davis
Senior Thesis, University of Colorado Boulder, 2023

Coronal Heating as Determined by the Solar Flare Frequency Distribution
J.P. Mason, A. Srivastava, et al.
The Astrophysical Journal, 2023

Honors and Awards

Outstanding Undergraduate of College of Engineering   Fall 2023
University of Colorado Boulder

Academic Engagement Award   Fall 2023
University of Colorado Boulder

Commencement Speaker   December 2023
College of Engineering and Applied Science, University of Colorado Boulder