Arjun Suryawanshi

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EDUCATION

University of Pennsylvania, School of Engineering and Applied Science, Philadelphia, PA *Expected May 2028*

Bachelor of Science in Engineering for Computer Science and Bioengineering

GPA: 3.94/4.00

Coursework: (Completed) Data Structures & Algorithms, Cloud Computing, Systems Programming, Discrete Math, Probability, Linear Algebra, Multivariable Calculus, (In Progress) Operating Systems, Databases, Machine Learning

Activities: Engineering Student Activities Council (ESAC) (Senior Treasurer), Penn Debate Society (Competitor)

SKILLS

Languages: Java, Python, JavaScript/TypeScript, HTML/CSS, SQL, C/C++

Frameworks/Tools: NumPy, Pandas, Matplotlib, Git/GitHub, Docker, TensorFlow, OpenCV

Professional: Microsoft Office Suite (Word, Excel, PowerPoint), Public Speaking

WORK & RELEVANT EXPERIENCE

CIS 1200 (Programming Languages & Techniques) | *Teaching Assistant,* Philadelphia, PA *August 2025 – Present*

- Selected as 1/8 TAs from over 50 applicants based on course performance and mastery of material
- Teach a recitation of 17 students, >300 answers to student questions on Ed Discussion (most out of any TA)

New Bolton Center Endocrinology Lab at Penn Vet | *Computational Researcher*, Kennett Square, PA *June 2024 – Sept. 2025*

- Developed a TensorFlow-based model to classify horse behavior associated with disease, hand-labelled >3000 data samples and tested >50 models to reach approx. 82% accuracy in pose estimation
- Created a custom 24/7 4-camera suite with OpenCV-based triangulation and Random Forest classification

Baur Lab at the Perelman School of Medicine | *Student Researcher,* Philadelphia, PA *Sept. 2024 – May 2025*

- Researched the effects of NAD precursors (NR & NMN) on mitochondrial function, finding >30% difference in survival rate for treated mice; published in JCI, co-contributor on "NAD precursors prolong survival and improve cardiac phenotypes in a mouse model of Friedreich's Ataxia"
- Updated Python LC-MS and MALDI-MS metabolomics pipelines to classify/visualize cardiac and liver tissue
- Performed statistical metabolic biomarker analysis, identifying 8 metabolites to classify SLC25A51 gene-edited mice

PROJECTS & EXTRACURRICULARS

Penn Electric Racing | *Member of Suspension and Vehicle Dynamics (VD) Subteams* *September 2024 - Present*

- Enhance Quasi-Static Simulation Python Software – integration of a new aerodynamics map to improve sim accuracy, utilizing Matplotlib to visualize changes and enabling the mechanical team to make data-driven design choices
- Design Anti-Roll Bars for 2025 car's suspension – conduct 4 compliance tests to verify tolerances within 0.005", improve calculations with a 6-DOF moment balance solver, leading to 30% improved correctness in ARB tuning range

Vanstagram *November – December 2025*

- Built Vanstagram, a scalable social media platform with a dynamic frontend using JavaScript and HTML/CSS, live chat system using Socket.io, and friend to friend graph visualization using Vis.js, hosted on EC2 for secure cloud deployment
- Developed backend with 11 DynamoDB tables for persistent and low-latency posts and comments, S3 for user images, and Java Apache Spark/Livy & EMR for personalized news feed via an adsorption-based recommendation algorithm

EdCamelBot *December 2025*

- Programmed a Slack bot to automatically post messages when students ask questions on Ed Discussion via Ed's API and GitHub Actions, enabling TAs to increase answer consistency and collect FAQ analytics

SustainaView *Sept. 2025*

- Programmed *SustainaView*, a React Native + Expo mobile app that uses AI (Gemini & SerpAPI) and computer vision to analyze a photo of a user's room, generate eco-friendly decor suggestions, and visualize a sustainable room makeover
- Built a full-stack backend with Node.js/Express, using MongoDB Atlas for user & wishlist data and AWS S3 for secure image storage; implemented authentication, cost comparisons, and sharing features for a clean UI/UX

AWARDS

- **Regeneron Science Talent Search (STS) Award** (2024): Earned for developing the ArmLev, a biomedical arm tremor stabilization device, activating within 0.3 seconds with >90% reliability over a 12Hz range of tremors
- **Math Olympiads** (2022-2024): 3x American Invitational Mathematics Examination (AIME) Qualifier