Shubham Saluja Kumar Agarwal

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EDUCATION

Purdue University West Lafayette, IN **May 2026**
Bachelor of Science in Computer Engineering, Minors in Math and Business Economics Current GPA: 4.0/4.0
Certificate in Entrepreneurship
Purdue Engineering Student Council Gold Industrial Roundtable Scholarship

SKILLS

- Software: Python, C, Autodesk Fusion 360, MATLAB, Onshape, HTML, CSS, SystemVerilog, Embedded C, Arduino, KiCad, LTSpice, Autodesk Eagle, RISC-V, JavaScript, Machine Learning, SQL, Cadence Virtuoso, Tableau, Kotlin
- Languages: English (native), Spanish (native), Hindi (conversational), French (basic)

WORK EXPERIENCE

Vernalis Consulting **May 2025 – August 2025**
Engineering Consulting Intern – Pune, India

- Designed and simulated a 5 kV HVDC transmission line in Simulink, with potential for implementation as a 2 km physical small-scale test system.
- Built and analyzed a DC/AC inverter model in MATLAB/Simulink for application in renewable and industrial systems.
- Improved accuracy of a Python-based ML model for solar farm detection in India from ~5% to ~70% by refining data preprocessing and model parameters.
- Delivered technical presentations on HVDC, inverters, batteries, and AR to executives and cross-functional teams.

Micron Technology **May 2024 – August 2024**
DRAM Quality Data Engineering Intern – Boise, ID

- Made four Python and SQL based dashboards to categorize and visualize data using Weibull curves and other techniques.
- Developed more than three dashboards interfacing Python and Gemini with the Atlassian Suite, such as Confluence and BitBucket, to automate tasks like page creation and summarization.
- Created Python based LLM interfaces with user feedback loops to allow for usage-based response quality improvements.
- Categorized and sorted millions of data points to verify data completeness using Tableau, Python and SQL.

Bechtel Innovation and Design Center **November 2022 - Present**
Peer Mentor — Purdue University, West Lafayette, IN

- Guiding BIDC members to complete over 200 electronics projects from design to manufacturing stage.
- Designing, milling, and electroplating PCBs using an Accurate 636 PCB mill, and electroplating solution made from scratch.
- Developing, prototyping and debugging circuits, and conducting surface mount and through-hole soldering.
- Organizing and executing three workshops to expose over 200 students to fundamentals of electronics.

RESEARCH EXPERIENCE

Wireless Sensing Circuits and Systems Laboratory **April 2023 - Present**
Research Assistant — Purdue University, West Lafayette, IN

- Developing world-first method for battery charge detection independent of relaxation effects.
- Created an STM32 microcontroller-based frequency counter to measure frequencies of up to 30MHz with a ±3Hz error alongside a Python based graphic user interface.
- Developed acquisition pipelines for multi-instrument battery datasets, applying filtering, noise removal, and synchronization techniques to extract reliable parameters and validate sensor/device performance.

Purdue Vertically Integrated Projects Computer Vision for Embedded Systems **August 2023 – May 2024**
Low Power Computer Vision Challenge Team Lead — Purdue University, West Lafayette, IN *September 2023 – December 2023*

- Modified, maintained, and fixed existing webpages, such as, lpcv.ai and purdueseris.org, based on Django and Bootstrap.
- Lead a team of four members to develop, run and coordinate the 2024 Low Power Computer Vision Challenge.

Universidad Autónoma del Estado de Morelos (UAEM) **July 2021 - September 2021**
Research Intern — Nanomaterials Lab, UAEM, Morelos, MX

- Designed, troubleshot, and built a high voltage power source with a variable output voltage between 15kV and 30kV from recycled parts and adapted to an electrospinning device, also manufactured from spare parts, saving over 3000 dollars.
- Verified applicability of results with a Scanning Electron Microscope, and image analysis software such as ImageJ.

PUBLICATIONS AND PRESENTATIONS

- **Kumar Agarwal, S. S.**, Mendoza Enríquez, B. U., & Hernández Rivera, D. (2022). Device fabrication from recycled electronic spare parts: Dip coating device and high voltage power supply adapted for electrospinning device.
    - Best presenter at 2022 11TH International Conference on Information and Electronics Engineering.