

# Ekmanreet Brar

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## Education

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California State University, Fresno

Expected Fall 2026

**Bachelor of Science, Electrical Engineering**

*Minor, General Business*

Relevant coursework: Advanced Circuit Analysis | Electric Power Systems | Control Systems | Programmable Logic Controls Lab | Microprocessor Architecture and Programming | Robotics

## Professional Experience

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### Electrical Engineering Intern - Harris & Sloan, Summer 2025

Developed and optimized electrical load calculations for multi-unit residential projects, reducing design revision cycles and improving cross discipline coordination.

Interpreted utility standards (PG&E, SDG&E, SCE, SMUD) to ensure code compliant designs and resolve system discrepancies across project documentation.

Created panel schedules for residential properties and calculated values with conductor sizing, voltage drop checks, and Title 24 compliance integration.

Led cross discipline design reviews, ensuring system integration between electrical, mechanical, and structural teams to maintain design integrity and project timelines.

Conducted system verification during site visits by reviewing electrical layouts, Bluebeam markups, and installation processes against design intent.

## Project Experience

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### Team Leader, Electrical and Computer Design- Autonomous Robot Project

Led a multidisciplinary team in the design, wiring, soldering, and microcontroller programming of a functional autonomous robot. Resolved hardware and software integration challenges through systematic debugging and systems level design practices to achieve reliable real time operation.

### Machine Learning Drone System – Caltrans Freeway Hazard Detection (In Progress)

Developing a Python based object detection and path planning system for an autonomous drone designed to detect freeway crashes and roadway hazards. Leading machine learning implementation while contributing to power system design, including load estimation and energy management under real time operating constraints.

## Skills

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Electrical: Electrical Load Calculations | Panel Schedules | One-Line Diagrams | NEC Code Interpretation (Exposure) | Electrical Plan Review | Title 24 Compliance (Exposure)

Technical: Python | Matlab | C++ | Computer Vision | Multisim | PSIM | PLC Fundamentals | SQL

Tools: Microsoft (Excel, Word, PowerPoint) | Google Applications | Bluebeam | LaTeX | Adobe Photoshop Certified

Involvement: IEEE | Society of Women Engineers | Avi Robotics