

# Gera Groshev

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## EDUCATION

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**University of California, Berkeley | B.S. EECS | Dec 2017**

**Cumulative GPA: 3.8**

Cosumnes River College | A.S. Electrical/Computer Engineering/Math | May 2015

**Languages & Frameworks:** C, C++, Python, Java, MIPS Assembly, Scheme, SQL, LabVIEW, Swift, OpenMP, SSE, HTML, CSS, jQuery

**Interests:** Internet of Things, Embedded & Autonomous Systems, Wearable & Mobile Devices, Swarm Robotics, Computer Vision

## Relevant Courses

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**Spring 2017:** Operating Systems, Digital Signal Processing

**In Progress:** Artificial Intelligence, iOS Development, Embedded Systems, Signals and Systems

**Completed:** Designing Information Devices and Systems I&II, Data Structures, Machine Structures, IEEE Micromouse Robotics, Discrete Mathematics and Probability Theory, Structure and Interpretation of Computer Programs

## Select Projects

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**WiiMote Computer Gesture Control** – In Progress

- Implementing a gesture recognition system using Nintendo WiiMote. Sampled data is classified as gestures.

**Pacman Agent AI** – In Progress

- Developing an AI to control autonomous agents in a Pacman world using adversarial search, probabilistic inference, and reinforcement learning.

**Voice Controlled Robotic Vehicle** – UC Berkeley – March 2016 – May 2016

- Built a small mechatronic car capable of recognizing and reacting to voice commands
- Applied Machine Learning algorithms and Data Science techniques for speech recognition
- Designed and implemented the controller using state space and linear feedback modeling

**Bear Maps Raster and Route AI** – UC Berkeley – April 2016

- Used a quadtree for map rastering and used lazy loading to load high resolution map tiles in response to zoom
- Parsed the OSM XML copy of OpenStreetMap database and implemented the AI to find shortest route

**Text Editor** – UC Berkeley – February 2016 – March 2016

- Implemented a combination of data structures for efficient text buffering, rendering, cursor movements, insertion and deletion, undo and redo operations, and scrolling
- Used JavaFX API for the GUI, positioning of text objects, and file processing

**SMUD Solar Regatta** – Sacramento, CA – November 2014 – May 2015

- **Awards:** Judge's Choice, Best Technical, Best Design, Most Artistic, Best Video
- Led the electrical and controls design team and implemented the electrical circuit for the control panel, which included a 24VDC motor, variable speed control, voltage and current meter, solar charge controller, various switches, and voltage converter for the electronics
- Designed an autonomous sun tracking device and its algorithm. Used Arduino microcontroller, motors, and sensors.

## Experience

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**Lab Assistant for Data Structures (CS61B)** – UC Berkeley – May 2016 - August 2016

- Provided guidance to students taking the Data Structures course at UC Berkeley

**Principle Course Designer** – Sacramento, CA – May 2016 - August 2016

- Organized and wrote material and mini projects for electrical circuits and applications in module format for self-learning to prepare future SMUD Solar Regatta Competitors
- Ideas included: C++ programming for Arduino, basic circuit analysis, switches and relays, circuit design
- Mini projects included: Algorithm for a password controlled locking device and stepper motor controller

**Lithium Battery Undergraduate Research** – Tennessee Tech University – June 2015 - August 2015

- Worked with faculty to discover the potential of current Li-based technologies
- Formulated chemical compositions for the electrodes of Li-S batteries
- Performed cycle testing, material analysis using x-ray diffraction, assessed limitations, and reported and presented discoveries at several events

## Accomplishments

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- **SMUD Solar Regatta:** Judge's Choice, Best Technical, Best Design, Most Artistic, Best Video
- **Solar Powered Trash Compactor:** Excellence in Engineering Award, Best Energy Award, Top 3 in Engineering, \$5000 grant
- **MESA Scholarship** • **President's Volunteer Service Award** • **Best Video Game**
- **MTHS Industrial Technology Departmental Award** • **MTHS Design and Technology Academy Scholarship**