Omar Sheikh

27515 Berkshire Hills Pl., Valencia, CA 91354   661.803.3472 | omar.sheikh@ucla.edu | linkedin.com/in/omarzsheikh

Education

Master of Science, Chemical Engineering, University of California - Los Angeles   **Expected July 2018**
    Thesis Topic: Global optimization of sequential processes. (Advisor: V. Manousiouthakis)
Bachelor of Science, Computer Science and Engineering, University of California - Los Angeles   **2010**

Technical Skills

Languages:	Python, Swift, Java, C/C++, Objective-C, SQL and others
Software Tools:	Visual Studio Code, Sublime Text 3, Xcode, Eclipse, MATLAB, Apache, Bash/Zsh, Git and others
Platforms/Libraries:	Mac OS X, Unix/Linux, Windows, Jupyter, Numpy, Scipy, Pandas, Raspberry Pi, Arduino microcontrollers
Other:	iOS SDK, Django Web Framework, Internet of Things, Slack and others

Work Experience

UCLA Systems Engineering Laboratory   **Jan. 2016 – Present**
Graduate Student Researcher   Los Angeles, CA

- Formed the **UCLA Systems Engineering Software Team** whose goal is to solve and implement large-scale computing challenges in the field of process design and systems.
- Lead by utilizing oral and written communication skills to manage projects and assign tasks to a team of 15 computer science and engineering students.
- Teach proper coding principals to team members, which includes writing readable efficient code, proper documentation, and how to use version control (**Git**) while working in a team.
- Stored, retrieved, and manipulated data for analysis of system capabilities and requirements.

UCLA Smart Grid Energy Research Center   **Jan. 2010 – Dec. 2015**
Software Engineer, Graduate Student Researcher   Los Angeles, CA

- Designed, implemented, integrated, debugged and tested software in Linux/Mac OS X/Windows environments. Wrote systematic and application documentation, including in code (**Doxygen**).
- Implemented the Home of the Future design at **LADWP** for smart appliances equipped to respond to Demand Response (DR) events.
- **Secondary Energy Storage**: Developed a secondary AC/DC power source using $LiFePO_4$ battery banks. Implemented controller to respond to DR events and provide power to either the grid or to drive localized AC/DC loads.
- **Internet of Things**: Designed and implemented smart appliances, each with a separate controller, which communicates to a smart gateway over the home area network (**HAN**). Each appliance controller can control the internal operations and cycles within the appliance, and manage energy consumption. Currently installed at select university-owned apartments and Home of the Future at **LADWP**.
- **Preference Engine**: Designed and implemented a recommender system that ensures the fulfillment of the utility's DR events, respects the customer's privacy and wishes, and also empowers consumers to become active participants in DR events. Created the base to implement machine learning.

UCLA Wireless Internet for Mobile Enterprise Consortium   **June 2009 – Sept. 2009**
Software Engineer Intern   Los Angeles, CA

- **Mobile Heart Monitor**: Integrated an ECG(EKG) system with microcontroller to communicate to an **iOS** device to monitor post heart-attack patients.
- Designed digital circuits for continued research in **RFID** systems.

WayForward Technologies Inc.   **Jan. 2007 – Jan. 2008**
Software Developer   Valencia, CA

- Collaborated with other programmers to create game software and write code for video games. Implemented features based on design documents.
- **EEG 3D Game**: Integrated electroencephalograph (EEG) brain scanning technology to provide real-time feedback for EEG therapy. Drew upon linear algebra knowledge and familiarity with **Irrlicht** and 3D Studio Max to program a 3D boat racing game using **C++**.

Hand Brewed LLC   **May 2007 – Dec. 2007**
Software Developer   Los Feliz, CA
- Programmed backend of websites using PHP.
- Worked in bash UNIX environment using ssh.
- Worked with designers to meet required specifications.

College of the Canyons: Computer Science Department   **Jan. 2006 – June 2007**
Lab Assistant   Valencia, CA
- Oversaw computer lab instruction and peer-to-peer programming assistance for Computer Science students.
- Assisted students with theoretical as well as concrete challenges encountered during and after programming classes (**Java**, **C/C++**).
- Answered questions and tutored students during open lab time. Graded student lab reports and homework assignments in the computer science courses to ensure project completion and concept mastery.

Selected Projects and Activities

UCLA Formula Zero Team   **Sept. 2008 – Dec. 2010, Jan. 2014 – Dec. 2016**
President/Controls Lead
- Led team that designed and built a Hydrogen Fuel Cell Racing Kart to compete in the Formula Zero International Championship.
- **CAN bus Communications**: Wrote multithreaded C++ code to integrated DC-DC Converter (US Hybrid) with FCPM (Hydrogenics), and Ultracapacitors (Maxwell).
- **4-Wheel Differential**: Designed an electronic differential using separate motor controllers (Kelly) and encoders (BEI).
- **Onboard Controller**: Wireless Monitoring of the FCPM States and State Transitions utilizing an onboard Linux computer, later replaced by **Raspberry Pi**.

AOAsoft LLC   **May 2012 – Sept. 2015**
Co-founder, Software Engineer
- One of three co-founders to launch extracurricular project to streamline inter and intra-organizational communication and to facilitate ease of non-profit transactions between donors and recipients.
- **Point of Sale**: Implemented the Credit-Card Processing Kiosk (**iOS** iPad) for use as in-house donations.
- **Server Management**: Refined server-side code on Ubuntu/Debian servers. Implemented secure and robust code for processing donations through First Data.
- Facilitated the acquisition and transfer of company ownership

UCLA Linux User Group   **Oct. 2008 – Oct. 2010**
Vice President
- Oversaw campus-wide recruitment and promotion of freely distributable implementation of Unix for personal computers, servers, workstations, and embedded systems.
- Designed and managed group projects and distributed related workload.

Patents and Publications

Yubo Wang; Omar Sheikh; Boyang Hu; Chi-Cheng Chu; Rajit Gadh, "Integration of V2H/V2G Hybrid System for Demand Response in Distribution Network," in *IEEE SmartGridComm* 2014, pp. 812-817.

Gadh, R. and Mal, S. and Prabhu, S. and Chu, C.C. and Panchal, J. and Sheikh, O. and Chung, C.Y. and He, L. and Xiao, B. and Shi, Y. 2012. Smart electric vehicle (ev) charging and grid integration apparatus and methods. US20130179061 A1, WO2011156776 A2, WO2013019989 A3. Filed December 4, 2012, and issued July 11, 2013.