

CARLYN LEE

carlyn.lee@gmail.com ◇ 626-372-4206

EXPERIENCE

Jet Propulsion Laboratory, California Institute of Technology

August 2012 - Present

Applications Software Engineer

Pasadena, CA

- Parallel channel coding simulations and high-res az-el terrain mask algorithm development on Cray XC40. Integration and development of Link Performance & SNR calculation and Data Volume modeling tools for concurrent link analyses in M2020 Relay Telecom Predictor.
- Communications support for collaborative multi-agent autonomy in maritime and subterranean environments. V&V for software on networked Raspberry Pi's and unmanned surface vehicles. Trade studies and implementation of radio mesh network in mining tunnel contributed to 1st place win in DARPA's Subterranean Challenge Urban Circuit. Ultra-wide band ROS integration to improve robot localization in GPS/comm deprived environments.
- Developed intelligent interfaces for DSN operators and telecom engineers to increase efficiency of operator support to NASA deep-space missions. Implemented framework for Link Complexity and Maintenance software to query events & trends from Sequence of Events files and estimate a link complexity profile. Architected data delivery systems for DSN downlink streams to reduce rover operation response-time to requirement of 20 minutes. Using Tableau & Web Data Connectors, Kibana aggregated data and event anomalies flagged by rules-engine and Event Verification Records & Engineering Housekeeping, and Accountability data.
- Telecom forecast prediction tools for various deep space missions, including full web stack development for SaaS application prototype. Implementation of network link models. Spacecraft, planetary, camera-matrix, and events analysis using C/C++. UX development for scheduling telecom links, e.g. Liferay portlet, Drupal, D3, WebGL.
- Modeling of communications traffic flow for human exploration of Mars & Moon. Python implementation of Markov model for estimating bandwidth requirements in Deep Space Network simulations.
- Radio science operator for Cassini Spacecraft. Investigation of atmospheric losses for 32GHz radio communications recorded on Deep Space Network open & closed loop receivers. Prototyped data warehouse for quick visualization of radio science data from Cassini Spacecraft during 2004-2015.

EXTRACURRICULAR, VOLUNTEER & PROFESSIONAL AFFILIATIONS

Interplanetary Small Satellite Conference Committee, Caltech Alpine Club Website Administrator.

2020 - present Foothill Unity Center, Monrovia, CA: Unloaded and packed food to families in need.

Nov 2019 - Feb 2020 Rosebowl Masters Swimming: As a Polar Bear Club Member, completed a minimum of 19 one-hour workouts of the 24 offered during the winter month 2020.

2019 Member of Duarte Ad Hoc Finance Advisory Committee, appointed by Duarte City Council.

2010 - 2012 Vice-President of Association for Computing Machinery, CSU Fullerton.

2000 - 2004 Walnut High School Swimming, four-year letterwinner & League Champion, All-American Academic Listing, CIF-SS title 100 fly.

1998 - 2004 Brea Aquatics, Senior Group Swimmer.

CERTIFICATIONS

Adult and Pediatric First Aid/CPR/AED, The American Red Cross (Certificate ID 00ISKSO).

Technician Class Amateur Radio Operator.

Private Pilot-ASEL +300hrs including instruction in PA28, C152, C172, CT210M.

EDUCATION

California State University, Fullerton

M.S. Computer Science

August 2012

B.S. Computer Science, Minor in Mathematics

July 2011