CARLYN LEE

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EXPERIENCE

Jet Propulsion Laboratory, California Institute of Technology August 2012 - present
Applications Software Engineer *Pasadena, CA*

- Architected data systems for COTS dashboards to explore aggregated data and event anomalies flagged by rules-engine, Event Verification Records & Engineering Housekeeping, and Accountability data. e.g. Tableau & Web Data Connectors, Kibana.
- Using Matlab, determined optimal decisional passes for telecom ground operations based on data volumes and pass schedules. Developed web GUI to generate and display Earth ground team schedules corresponding with decisional passes.
- Designed framework for Link Complexity and Maintenance software to query events or trends from Sequence of Events files and estimate a link complexity profile.
- 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. Data warehouse for quick visualization of radio science data from Cassini Spacecraft during 2004-2015.

Spectral Imaging Laboratory November 2011 - present
Consultant *Pasadena, CA*

- Post-processing algorithm to correct for manufacturing inconsistencies in prototype of artificial compound eye.
- Application of super resolution algorithms to ray-traced simulations of images captured with artificial compound eyes. Using Matlab and openCV, improved resolution of images degraded with noise models.
- Modeling of visual acuity for multiple apertures on curved surface. Implementation of neural networks to improve angular resolution of a point light source.

California State University, Fullerton December 2009 - August 2012
Research Assistant & Intern *Fullerton, CA*

- Designed and implemented framework to improve run-time efficiency & accuracy of cancer detection using eigen decomposition of DNA microarray data with large feature set.
- Implemented framework to explore next generation sequencing alignment techniques for discovering binding sites in heat-shock proteins, integration of C/C++ self-organizing maps.
- Delivered scheduling tool for library resources using .NET framework. C# student web application, VB.NET admin configuration tool. Database design & implementation using SQL Server & stored procedures.

EXTRACURRICULAR, VOLUNTEER & PROFESSIONAL AFFILIATIONS

Interplanetary Small Satellite Conference Committee; Caltech Alpine Club Website Administrator; Private Pilot-ASEL +300hrs including instruction in PA28, C152, C172, CT210M; Technician Class Amateur Radio Operator
2010 - 2012 Vice-President of Association for Computing Machinery, CSU Fullerton.

AWARDS & HONORS

2013 1st place Biotech Track, 15th Annual IEEE Biomedical Engineering Biotech Contest.
2012 Anita Borg Scholarship, CSUPERB Travel Grant, Orange County Outstanding Engineering Student Award.

EDUCATION

California State University, Fullerton
M.S. Computer Science *August 2012*
B.S. Computer Science, Minor Mathematics *July 2011*