

## Education

Carnegie Mellon University Pittsburgh, PA

## Current Position

SpaceX Hawthorne, CA

June 2012 – Present

Software Design Engineer in Test

Productivity ranked in top 5% of company during performance review

Holodeck: Automated testing framework for internal Warp Drive ERP system (~1.8k lines JS; ~1.2k lines C#; ~400 lines HTML/CSS)

Simple, DRY C# framework which exposes fluent interface and abstracts features specific to Warp Drive

Uses Selenium to run tests in Chrome, Firefox, IE, Safari, Android, and HtmlUnit

Unit test code based on "page object" classes which abstract manipulation of each page in Warp Drive with a consistent API to each element

Autogenerated during usage of Warp Drive test environments, with concise element names, and checked in to revision control

Holodeck test recorder integrated into Warp Drive interface (used by devs and business analysts)

Minimalistic and intuitive to use, while including advanced features such as string manipulation capabilities, dynamic C# execution, and in-browser checkin to revision control of test code and data files

In-browser interpreting of pre-recorded tests and assertless "macro" tests from revision control

Thorough documentation (with videos) + iterative usability testing and user training

In development: Starfleet: Distributed testing system for Warp Drive (~300 lines Haskell)

Master server balances load and stores history with Redis

Slaves are headless VirtualBox VMs on dev machines

Will perform speedy continuous integration on Development branch and email VLC screencasts + stack traces of failed tests to responsible devs

Planned: Distributed black-box testing AI for Warp Drive

Will apply machine learning algorithms to continually generate and run novel Holodeck tests against Warp Drive, notifying team of uncovered bugs

## Projects/Competitions

Optic.io Fall 2012 – Present

Open source facial gesture-controlled mouse software

Current prototype in Python with SimpleCV OpenCV bindings

Stripe: Capture the Flag Spring 2012

Security wargame inspired by SmashTheStack's IO

One of 250 players to successfully "capture the flag" out of 12,000 recorded attempts

Levels (all setuid exploit variants, in ascending order):

\$PATH manipulation (C / Bash) • Cookie manipulation (PHP / curl) • Buffer exploit (C / assembly) • Buffer overflow (C / assembly) •

Pickle serialisation exploit in Python server (Python / curl) • Timing attack (C)

Upskirt.Go Spring 2011

Open source Go bindings for the Upskirt implementation of Markdown

Hackswipe Fall 2010

Utility to quickly and seamlessly charge any credit card on the spot, via mobile Web frontend or SMS

Won award for best mobile application in Carnegie Mellon 2010 Yahoo! Hack Day competition • Finalist in business-oriented Hack Pitch competition

Minimalistic mobile Web interface to a Perl/Mechanize/PayPal and Python/Pygooglevoice backend

Eugene McCabe Spring 2010

Led project to create role-playing game

Designed and implemented strategic turn-based battle / character growth / party system • Collaborated on designing mechanics, maps, and artwork

Contributed to custom game engine code (Java Swing) • Programmed every level • Wrote specifications for maps, characters, soundtrack, and storyline

## Technical Experience

**Languages** C • Go • Haskell • JavaScript • CoffeeScript • C# • Java • Python • Perl • PHP • Bash • Assembly • SQL • HTML/CSS

**Operating Systems** GNU/Linux (6 years experience) • Windows • Mac OS X • Other Unices

## Certifications

Certification	Vendor	Date
MCSA (Microsoft Certified Systems Administrator)	Microsoft	2009-06-12
MCDST (Microsoft Certified Desktop Support Technician)	Microsoft	2009-06-02
A+ IT Technician	CompTIA	2009-03-04
Open Water Diver	PADI	2006-07-20
Black Belt	World Champion Taekwondo	2006

## Interests and Study

Functional Programming  
Computer Vision  
Machine Learning (Coursera lectures)  
Computer Systems (university)  
Human-Computer Interaction (university)  
Principles of Software Engineering (secondary)  
Network Administration (secondary)  
Venture Capital Investing (university)  
Intellectual Property Law (university)