Matthew Gilson, Ph.D

1400 Hopkins Ave, Apt 303, Redwood City, CA 94062, USA
m.gilson1@gmail.com • (603) 892-7736

EDUCATION

University of New Hampshire, Durham, New Hampshire, USA

- Ph.D. in Physics and Space Science   Aug 2007 – Dec 2011
  - Thesis: *Global Structure of the Nightside Proton Precipitation During Substorms Using Simulations and Observations*
  - Adviser: Prof. Jimmy Raeder

Grove City College, Grove City, Pennsylvania, USA

- B.S. in Applied Physics   Aug 2003 – May 2007

Udacity

- Nanodegree in Machine learning (in progress)   Sep 2016 – Present

WORK EXPERIENCE

Pattern Technologies Inc.

- Software Engineer   Jul 2015 – Present
  - Joined the founding team at an early stage startup. Developed automated tooling for code testing and deployment. Working with two other engineers, coded the product's web application and marketing websites that served hundreds of customers daily.

Google Inc.

- Web Solutions Engineer   Jul 2015 – Jul 2013
  - Developed internal tools to support Google's business.
  - Conducted code reviews for my team and others.

University of New Hampshire

- Research Scientist   Jan 2012 – Jul 2013
  - Coupled the global MHD Magnetospheric simulation (OpenGGCM) with the Rice Convection Model of the inner magnetosphere. This enabled more accurate simulation of the Earth's magnetic field and it's interactions with solar plasmas.
  - Published peer reviewed journal articles.
  - Mentored graduate students.

AWARDS & ACHIEVEMENTS

StackOverflow   2011 – Present
Answered nearly 4000 questions.
Top 0.06% all time.
10th all time leading answerer of Python questions.

SKILLS

Programming Languages
Python (fluent), Javascript, C (proficient), Fortran (fluent), Bash (proficient), Java (novice)

Frameworks
Google App Engine, AngularJS

Agile Developement
Certified Scrum Master in 2015. Still practice agile methodologies at current workplace.

SELECTED PUBLICATIONS

JOURNALS

Gilson M. L., J. Raeder, E. F. Donovan, Y. S. Ge and S. B. Mende (2011) "Statistics of the longitudinal splitting of proton aurora during substorms", *J. Geophys. Res., 116*(A8), A08,206, doi:10.1029/2011JA016640

Gilson, M. L., J. Raeder, E. Donovan, Y. S. Ge, and L. Kepko (2012), "Global simulation of proton precipitation due to field line curvature during substorms", *J. Geophys. Res., 117*, A05216, doi:10.1029/2012JA017562.

Cramer W.D., J. Raeder, F.R. Toffoletto, M.L Gilson, and B. Hu (2017), "Plasma Sheet Injections into the Inner Magnetosphere: Two-Way Coupled OpenGGCM-RCM Model Results", *J. Geophys. Res., 122*, doi:10.1002/2017JA024104.