# Benjamin Chang

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## PROGRAMMING SKILLS

**Languages**: Python 2/3, Ruby, JavaScript (ES6), SQL, HTML5, CSS3, SCSS/Sass, LaTeX, Learning C & R

**Technologies**: pandas, GeoPandas, MatPlotLib, virtualenv, jQuery, Node.js, mongoose, Express, Rails, Active Record, AngularJS, MongoDB, PostgreSQL, MySQL, RESTful API Development, Authentications

**Software**: Git, npm/yarn, bower, gulp, Heroku, GitHub, Trello, Dev-tools, CLI Shell, ArcGIS, QGIS, GeoDA

**World Language**: fluent in Mandarin Chinese

## EXPERIENCE

**Web Development Immersive** — London, UK
*General Assembly* — *June 2017 - Sept 2017*
- **Project 3**: Built a polling website for group meals with a team of four, built on express, Node.js, MongoDB and AngularJS.
- **Project 4**: In a team of two, wrote a meal planning, recipe editor and grocery list generator website to help people keep track of their personalized diets. The project used AngularJS, Ruby/Ruby on Rails, SCSS and PostgreSQL.

**Web Development Intern at NASA World Wind** — Mountain View, CA
*Ames Research Center* — *June 2016 - Sept 2016*
- **Earthquake Signal Precursors Data Analysis**: Created statistical, signal analysis methods and visualizations in Python for an earthquake data analyzation technology demonstrator
- **Web World Wind**: Worked on a team to develop technology demonstrators for the NASA Web World Wind JavaScript library
- **QuakeHunter**: Developed an improved earthquake visualization web app called *Quake Hunter* with the USGS Innovation Center for Earth Science.

## UNIVERSITY RESEARCH PROJECTS

**Forest Fire Suppression Cellular Automata Model and Statistical Analysis** — London, UK
*King's College London* — *April 2017*
- **Cellular Automata Modeling**: Worked with a team to develop a forest fire cellular automata model based on Karafyllidis and Thanailakis's local rule implemented in Java, Python and R
- **Algorithm Development**: Used model to analyze the utility of Mark Finney's minimum travel time (MTT) fire paths as a metric to conduct forest fire suppression through fuel placement optimization
- **Data Analysis**: Statistical analysis carried out in R and Python, conclusively showed Finney's MTT to be an inefficient metric for forest fire suppression.

**Modeling Road Effects on Wetland Plant Community Structure and Health** — London, UK
*King's College London* — *May 2016 - March 2017*
- **Field Work**: Studied the edge effects of road networks on plant community health and biodiversity in roadside wetland environments, conducted field data collection.
- **Data Collection and Modeling**: Analyzed LiDAR point cloud data and C-LINE modeled $NO_2$ data through QGIS mapping to create terrain profiles for statistical analysis against field collected plant data.
- **Statistical Analysis**: Statistical analysis carried out in Python & R, showed road generated $NO_2$, solar insolation and elevation to be major controllers on plant health, however not biodiversity

## EDUCATION

**General Assembly** — London, UK
*Web Development Immersive* — *June. 2017 – Sept. 2017*

**King's College London, University of London** — London, UK
*BS Geography: Geocomputation and Spatial Analysis (1st Class Honors)* — *Sept. 2014 – July. 2017*

## AWARDS

*Europa Challenge Award for QuakeHunter*

*Eagle Scout (Boy Scouts of America)*