

Benjamin Chang

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EDUCATION	<i>Bachelor of Science: Geography</i>	2014–2017
	King's College London, University of London Concentration: Geocomputation and Spatial Analysis	
	<i>Highschool</i>	2010–2014
	San Mateo High School, CA	
EXPERIENCE	<i>Web Development Intern at NASA World Wind</i>	June-Sept 2016
	Ames Research Center, Mountain View, CA <ul style="list-style-type: none">• Worked on a team to develop technology demonstrators for the NASA World-WindJS Library• Developed an improved earthquake visualization web app called <i>Quake Hunter</i> with the USGS Innovation Center for Earth Science• Created statistical and signal analysis methods and visualizations for an earthquake prediction technology demonstrator with Trillium Learning and Dr. Friedemann Freund	
COURSEWORK	Boros, M., Chang, B. and Lindsey-Walters, A. (2017) <i>Minimum Travel Time based Fuel Treatment Optimization Algorithm in Cellular Automata Forest Fire Simulations</i> . Applied Geocomputation and Spatial Analysis, King's College London. <ul style="list-style-type: none">• Developed a forest fire cellular automata model based on Karafyllidis and Thanailakis's (1997) local rule implemented in Java• Used model to analyze the utility of Mark Finney's (2003) minimum travel time fire paths as a metric to conduct forest fire suppression through fuel placement optimization• Statistical analysis carried out in R and Python, conclusively showed Finney's MTT to be an inefficient metric for forest fire suppression	
	Chang, B. (2017) <i>Modeling Road Effects on Adjacent Wetland Plant Community Structure and Health</i> . Independent Geographical Study (Undergraduate Dissertation), King's College London. <ul style="list-style-type: none">• Studied the edge effects of road networks on plant community health and biodiversity in roadside wetland environments• Collected plant health and biodiversity data in the field• Analyzed LiDAR point cloud data and C-LINE modeled NO₂ data through QGIS to create terrain profiles for statistical analysis against collected plant data• Statistical analysis carried out in Python, showed road generated NO₂, solar insolation and elevation to be major controllers on plant health, however not biodiversity	
AWARDS	Europa Challenge Award for "QuakeHunter"	2016
	Eagle Scout (Boy Scouts of America)	2013
	College Board AP Scholar	2012–2013

SKILLS

Computer Languages:

- Python 2 & 3: Pandas, GeoPandas, Matplotlib, SciPy, Sci-Kit Learn, NumPy, GDAL, virtualenv
- JavaScript: node.js, npm, CommonJS, AngularJS, worldwind.js, OpenLayers, WebPack, ES6, ExpressJS, ejs, mongodb, mongoose, bcrypt
- Ruby
- HTML & CSS: Bootstrap
- TeX, LaTeX typesetting programs
- R Language

Software:

- Git
- Heroku hosting services
- Shell
- ArcGIS, QGIS, GeoDA and GRASS GIS 7
- IBM SPSS, Sigma Plot
- MS Word, Excel, PowerPoint

World Language:

- Fluent in Mandarin Chinese

CONFERENCES ATTENDED

Europa Challenge, Trento, Italy

2016

PRESENTATIONS, PROCEEDINGS and PAPERS

Chang, B. and Militão, G. (2016, September) *Quake Hunter: Visualizing Earthquake Data in 3D on the Web*. Application presented at the 2016 Europa Challenge, Trento, Italy.

Castillo, M., Chang, B., and Salah, F. (2016, September) *Earthquake Signal Precursor Algorithms: Investigating the Use of Anomalous Magnetic Signals as Earthquake Warnings*. Presented at the 2016 Europa Challenge, Trento, Italy.

AFFILIATIONS

National Eagle Scout Association (USA)
King's College London Geography Society
King's College London Film Society

REFERENCES

1. *Patrick Hogan*
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2. *Johnathon Stock*
Director, USGS Innovation Center, Menlo Park CA
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3. *Dr. Ruth Craggs*
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