Benjamin Chang

1217 Beach Park Blvd. Foster City, CA 94404
ben.chang@hotmail.co.uk
Mobile: (650) 867-6134

EDUCATION

Bachelor of Science: Geography   2014–2017
King's College London, University of London
Concentration: Geocomputation and Spatial Analysis

Highschool   2010–2014
San Mateo High School, CA

EXPERIENCE

Web Development Intern at NASA World Wind   June-Sept 2016
Ames Research Center, Mountain View, CA
- Worked on a team to develop technology demonstrators for the NASA World-WindJS Library
- Developed an improved earthquake visualization web app called *Quake Hunter* with the USGS Innovation Center for Earth Science
- Created statistical and signal analysis methods and visulaizations for an earthquake prediction technology demonstrator with Trillium Learning and Dr. Friedemann Freund

COURSEWORK

Boros, M., Chang, B. and Lindsey-Walters, A. (2017) *Minimum Travel Time based Fuel Treatment Optimization Algorithm in Cellular Automata Forest Fire Simulations.* Applied Geocomputation and Spatial Analysis, King's College London.
- 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) *Modeling Road Effects on Adjacent Wetland Plant Community Structure and Health.* Independent Geographical Study (Undergraduate Dissertation), King's College London.
- 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 NO_2 data through QGIS to create terrain profiles for statistical analysis against collected plant data
- Statistical analysis carried out in Python, showed road generated NO_2, 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, NPM, CommonJS, ReactJS, ReduxJS, WorldWindJS, Open-Layers, WebPack, ES6
- HTML & CSS: Bootstrap
- TeX, LaTeX typesetting programs
- R Language
- Familiar with C

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 Algorithims: 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*
   Project Manager, NASA Ames Research Center, Mountain View CA
   Email: patrick.hogan@nasa.gov — Phone: +1 (650) 269 2988

2. *Johnathon Stock*
   Director, USGS Innovation Center, Menlo Park CA
   Email: jstock@usgs.gov — Phone: +1 (650) 329 4968

3. *Dr. Mark Mulligan*
   Reader/Senior Lecturer, King's College London, London UK
   Email: mark.mulligan@kcl.ac.uk — Phone: +44 (0)20 7848 2280