

# KYLE FITZSIMMONS

## FULL-STACK DEVELOPER

Full-stack developer experienced with designing geospatial APIs and dashboard interfaces to analyze geographic information. Developed GPS trip detection and map matching algorithms for automation of origin-destination surveys.

### EDUCATION

Concordia University, Montreal  
BA Geography & Human Environment 2015  
Minor in Urban Studies

Landmark College, Putney, VT  
Transferred in 2009

### SKILLS

**PYTHON:** Flask, Pandas, NetworkX, REST APIs  
**DATABASES:** PostGIS, MongoDB, Redis  
**FRONT-END:** ReactJS, jQuery, Charting  
**LINUX & MISC.:** nginx, gunicorn, supervisord,  
web scraping, git, Docker

### PROJECTS

**Btc-Arbitrage**  
Used early price instability of bitcoin to perform small trades across exchanges when spreads were mismatched

**BusNinja**  
Leaflet.js map which uses GTFS data and allows user to see current bus locations interpolated by bus routes and scheduled stop times

**Logbot**  
Centralized IRC logger for odd services such as Arduino sensor readings, scraped river tide heights, transit feeds and craigslist

**SaltyHomes API | Tony Fantis**  
Prototyped backend API with normalized TIGER and MLS data for Salt Lake City-area residential property listings

### PUBLICATIONS

Patterson, Z., & Fitzsimmons, K. (2016). DataMobile: A Smartphone Travel Survey Experiment. Transportation Research Record (Journal of the Transportation Research Board), 2594. doi:10.3141/2594-07

✉ kfitzsimmons@gmail.com  
🌐 <http://kylefitz.com>  
☎ 514.575.9050  
📍 Montréal, QC

**in**  
<https://ca.linkedin.com/in/kyle-fitzsimmons-96272221>  
🔗 kafitz

### EMPLOYMENT

Dr. Zachary Patterson / TRIP Lab  
Concordia University, Montreal, QC  
Research assistant & developer · Jan 2014 to Current

Scraper that emulated user interacting with ASP.NET forms to download tax assessment data for all regional sales over a multi-year period

Developed AMTOD desktop mapping software to predict how residents will relocate to access better transportation facilities depending on adjustable socioeconomic factors and transit times

DataMobile project to inference user origin-destinations and travel modes. This consisted of developing an algorithm to detect user trips from raw GPS data, determining surface routes taken from sparse points, and clustering for common locations

Administered lab and cloud IT; transitioned lab to current Python and SQL tools for data analysis

**Computer Cafe**  
Arlington, MA  
Repair Tech · 2006 to 2008

High school employment of repairing PCs and providing on-site networking & IT

### ACTIVITIES

CJLO · Radio host  
Apr 2011 to Sep 2013  
A jazzy electronic show in the late night hours

Other interests: Skiing, music production, exploring by bicycle