Stuck in traffic (with transit.big.data)

*Interested to apply big data algorithms to urban transportation problems?*

Improve your data skills while working on a real problem together with researchers and a urban transportation agency.

**Background:** Commuting in Jakarta, Indonesia, a region with 30 million inhabitants, is anything but easy. TransJakarta, the city’s bus-rapid-transit (BRT) system, is the largest in the world by track length, yet ridership is significantly lower than for other BRT systems.

**Project.** A team of researchers from U Chicago, MIT and Harvard are working together with TransJakarta (PT Transportasi Jakarta or TJ) to analyze and experiment with system improvements that would eventually boost ridership. We are studying bus bunching, bus scheduling, driver incentives, among other angles.

**Data.** We work with the trove of big data that is collected daily by TJ as part of their operations: minute-by-minute bus GPS data, and passenger-level tap-in and tap-out data.

**Challenge.** Big data comes with big challenges. Your challenge is to build on powerful existing code in python to develop, test and implement a suite of tools to automatically process raw GPS and passenger ticket data. This includes algorithms to snap points to the bus route network and detect outliers, and manually cleaning network route data. At a later stage we may start running bus simulations in a synthetic environment.

**You.** We seek an exceptional term-time RA to make an important contribution to this project. You will work closely with the researcher team.

The ideal candidate:
- Computer science major.
- Excellent python skills.
- Ability to build on existing code basic familiarity with git.
- Familiarity working with data is a plus.
- Keen attention to detail and perseverance.
- Interest in economics, transportation and/or urban issues is a plus.
Position details:
- Paid position.
- Start date: ASAP.
- Ideal commitment: 10 hours per week

To apply, email Gabriel with subject line “[RA transit big data]” with a CV and a short paragraph describing your python experience and working with data (courses and projects), and an unofficial transcript.

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