Alex Pegg

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education

bsc | computer science and economics
university of toronto | 2016-2020 (graduated)
- honours bachelors of science
- cs gpa: 3.34
- cumulative gpa: 3.07
- passion for webdev and ai

relevant courses
full transcript on request
- software design and engineering
- programming on the web (A+)
- algorithm design and analysis (A-)
- data structures and analysis
- introduction to neural networks
- machine learning & data mining (A)

skills

languages and technologies
experienced
  python • java • html/css • javascript
proficient
  php • C • SQL • neo4j

general
web/full-stack
- full-stack server (flask/nodejs/php)
- responsive apps - React hooks & jquery
- nodejs express routing and websockets
- sqlite and mysql databases with triggers

os
- ssh and sftp into linux environments
- version control via git in console
- programming js, C, php in vim

other
- agile group projects with SCRUM
- implementing machine learning technologies in vanilla numpy or pytorch

ui web apps
- https://peggalex.github.io/tShirtWebsite
  react hooks and mobile queries

- https://peggalex.github.io/test2048
  key listeners, css animations and cookies

- https://peggalex.github.io/rachel
  desmos API and fetch call

- More projects and web apps on my website: https://peggalex.github.io

experience

university of toronto | teaching assistant
winter 2019
- paid position at the university
- hosted weekly 2-hour tutorials for first year computer science
- taught in python
- created solution manuals and marked midterms/final exams
- host office hours and invigilate tests

project include | teaching assistant
summer 2018
- volunteering student initiative
- coding bootcamp for at-risk secondary students in mississauga
- teaching basic python at different libraries and schools
- https://www.facebook.com/hashtagprojectinclude

projects

microeconomics grapher
python flask server - desmos api and sympy
- url: https://mcsapps.utm.utoronto.ca/micrographer
- microeconomics (indifference curve analysis) graphing software
- embedded on homepage for University of Toronto Mississauga ECO200 students.
- full stack with python flask, javascript desmos api for graphs
- backend python library sympy (algebraic solver & calculus)
- ssh and sftp university linux servers to host and maintain code
- self-initiative, solo project
- the URL has a help page that demonstrates all the features

secure messenger
nodejs sqlite full-stack server - react, websockets and express
- files: https://github.com/peggalex/whisper
- messenger app that prevents middle-men (including the server) from reading messages (diffie-hellman key exchange between users)
- React for front end, using rem and vh/vw css sizing for accessibility
- websockets and express routing to talk to server
- backend validation and RESTful API with appropriate status codes
- sqlite database with appropriate triggers
- subtle.crypto for hashing, encrypting and generating keys.

awards

scotiabank | 2020 big data & ai case competition
winter 2020
- first place winner ($3000 prize)
- detecting money laundering in real bank data (unsupervised classification)
- Microsoft Azure cloud computing for heavy tasks (via ssh and sftp)
- parameterised using neo4j database and python driver
- used multivariate normal from scipy and numpy to detect outliers
- some slides: https://peggalex.github.io/graphDemo