Wentao Wu

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Seeking Entry-level Software Engineer Position

EDUCATION

M.S. in Computer Science	Stony Brook University, NY; GPA: 3.61	Expected: Dec 2020
Ph.D. in Environmental Engineering	Nankai University & Penn State University, China & PA; GPA: 3.91	Dec 2015
B.S. in Environmental Science	Nankai University, Tianjin, China; GPA: 3.7	Jun 2010

SKILLS

Languages: Java, Python, C, SQL, HTML/CSS/JavaScript, PHP

Frameworks: Spring Boot, Angular, Flask, Bootstrap4, Hadoop, Spark

Database: MySQL, DB2, Redis

Platform/Tools: Unix/Linux, Git, Docker, Maven, GDB

Libraries: D3.js, pandas, Matplotlib, scikit-learn

EXPERIENCE

Graduate Research Assistant, Data Science Lab, Stony Brook University — Jan 2020 – Present

- Under the guidance of distinguished Prof. Steven Skiena, we work on several tasks range from Building ML Models, Data ETL, Algorithms Design, and Full-stack Web Development. For one of our projects, we analyzed how political polarization and other critical factors affect marriage; we identified marriage couples from over 300G US voting registration data and tracked their marriage history. In another project, we built a web survey applications which collect data to analyze public's openness to modern technologies.

Research Assistant, Bio-conversion Lab, Pennsylvania State University — Sep 2013 - Mar 2015

- We worked on designing a Sustainable Bio-resource System model, which simulates environment inputs and energy/chemical outputs from bio-energy plants. We extracted large scale historical hydrological/meteorological data and research data to train our model.

PROJECTS

- **Data Mining for Marriage Analysis (Python)**
  - ETL and analyzed 8 years' US national voting data (1.2 billion data points in total) for extracting marriage affected factors, with Python3 pandas library for data cleaning and transformation, and scikit-learn for model training
  - Developed a married couple recognizer based on personal info in each year's pool, the designed algorithm works in an acceptable time without compromising accuracy
  - Implemented a marriage relationship prediction model based on Random Forest algorithm by tracking families' history
- **Online Game Survey Application (Full-stack)**
  - Designed and developed two web-based games to collect and analyze human player's decision-making behavior affected by real-time AI suggestion, deployed in University's research lab's server with public access.
  - Workflow developed in JavaScript and Bootstrap as frontend, with PHP and MySQL as the backend and database; designed database schemas for game data retrieving and storing collected responses
  - Bail-game demo: http://allv4.all.cs.stonybrook.edu/bail_game/test.php
- **Full Stack eCommerce Application (Full-stack)**
  - Developed a Full Stack eCommerce application with Angular front-end and Spring Boot back-end
  - The app demo will be deployed to Amazon Could (AWS) soon.
- **Programming Language Design (Compiler)**
  - Implemented a programming language with Python Lex and Yacc, syntax and semantics is similar to SML
  - Statements and functionalities include all data types, operations, error check, and functions
- **TCP Initial Window Size Trend Tracking (Network)**
  - Re-implement a research paper with Zmap module to investigate TCP initial window (IW) size trend
  - Probed IW configurations of top 1 million Alexa websites, result shows that IW10 is more dominating than 2 years ago
- **DNS Resolver with Security Extensions (Network)**
  - Developed a DNS resolver which implements Unix "dig" command-line tool functions (Python)
  - Capable of resolving "A", "NS" and "MX" DNS types, and implemented signature validations namely DNSSEC
- **Simulated Linux Kernel Development (Kernel Programming)**
  - Implemented a system call with message encryption/decryption, and a process scheduling policy based on EDF (C, GDB)
  - Implemented a virtual file system, which recursively creates directories for task information storage