Daniel Nguyen

Mathematics, University of Washington 2020

Recent university graduate with an extensive experience in computer science and mathematics. Having developed a strong analytical mindset and problem-solving skills, I am looking to apply my abilities in the tech industry as a software engineer.

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EDUCATION

Mathematics, BS
University of Washington

09/2016 – 06/2020

Courses

- Discrete & Continuous Mathematical Modeling
- Abstract Algebra (Ring, Group & Field Theory)
- Algorithms and Computational Complexity
- Programming Languages
- Scientific Computing & HPC
- Number Theory & Cryptography
- Data Analysis & Machine Learning
- Data Structures & Algorithms
- Artificial Intelligence
- Database Management

WORK EXPERIENCE

UW Department of Linguistics
Student Assistant

09/2017 – 03/2018

Tasks/Duties

- Updated the department's website to display faculty research.
- Wrote scripts for research in Natural Language Processing.
- Organized coursework, paperwork (financial & administrative).
- Digitalized dissertations and Masters/PhD Theses.
- Worked closely with department faculty such graduate students and professors.

PERSONAL PROJECTS

Machine Learning

- Implemented an algorithm utilizing various methods (Naïve Bayes, Linear Discriminant Analysis, K-Nearest Neighbors) in which given a 15-second sample of any song would categorize the piece according to 16 possible genres (classical, jazz, hip-hop, etc.).
- Used Keras & Tensorflow to to train a neural network to recognize handwritten digits from the MNIST database (taken from Kaggle).
- Used Principal Component Analysis (PCA) and Dynamic Mode Decomposition (DMD) for computer vision oriented projects, such as background subtraction and tracking object movement in video streams.

Codeday Seattle & defHacks() (3 years)

- Built several projects each in a given 24-hour timespan:
- Used Construct 2 to build a 2D adventure game built from scratch
- Email Stenographer - A Google Chrome extension that allows users to respond to emails aptly using shorthand to generate template responses.
- Used Unity3D to make a runner/terrain survival game.

TECHNICAL SKILLS

Programming
Javascript, Java, C++, Ruby, Common LISP

Scripting
Python, Bash, MATLAB

Markup
LaTeX, HTML, CSS, Markdown

Databases
SQL, MongoDB, AsterixDB, Azure, AWS

Other Technologies
Vim, Git, SSH, Node.js, React / Redux, Linux

SKILLS

Public Speaking | Team Player | Intentionalist | Writing | Consistency | Aptitude | Adaptability

COMPUTER SCIENCE PROJECTS

Artificial Intelligence for Puzzles and Games
Combined search algorithms (Heuristic search, DFS/BFS, Minimax, Hidden Markov Models) to find optimal moves for Towers of Hanoi and Tic-Tac-Toe.

High Performance Computing (HPC)
Modeled sparse matrices & implemented efficient operations on them (Jacobi Iteration) using parallelization in C++ and cloud computing (AWS).

RNA Folding & Structure
Programmed algorithms for problems like interval scheduling, protein analysis, & RNA folding using Greedy, Divide-and-Conquer, and DP approaches.

Flight Booking Service
Designed a flight booking service with functional booking capabilities using a SQL server through Azure and Java's database API.

Noodle: A Search Engine
Implemented the famous PageRank algorithm in Java to build a relatively small search engine. Built with structures such as hashes, heaps, and graphs.

MUPL (Made Up Programming Language)
Construct compilers with interpreters and parsers. Improved my abilities for unit testing and design choices with Ruby and Racket.

LANGUAGES

Vietnamese
Native or Bilingual

French
Upper-intermediate

Latin
Expert

Sanskrit
Upper-intermediate