Vinh Dao

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Objective

To obtain a position in the software engineering with strong knowledge of math-computer science

Education

B.S. In Mathematics-Computer Science | University Of California, San Diego | GPA: 3.0   2019

Computer Science Coursework:

- *Advanced Data Structures* – use and implement data structures & application such as balanced trees, tries, graphs, hashing, use C++, Microsoft Window, Vim
- *Object Oriented Programming* – learn inheritance, dynamic binding, exception handling, use Java
- *Software Tools and Techniques* – hands on software development tools and techniques, debugging of program, use Vim
- *Mathematics for Algorithms and Systems* – study basic enumeration and counting techniques, recurrence relations, graph theory, asymptotic notation, elementary applied discrete probability to analyze algorithms and systems
- *Theory of Computation* – study finite automata, regular expression, push down automata, context free languages, Turing machine, halting problem, undecidability, P vs NP
- *Design and Analysis of Algorithms* – apply sorting, searching, pattern matching, graph and network algorithms to design and analysis of efficient algorithms, measuring complexity of algorithms, time, storage, NP-complete problems
- *Introduction to Python* – focus on scientific computing, writing functions, test, debugging using Jupyter Notebook

Math/Computer Science related Coursework:

- *Introduction to Cryptography* – study basic concepts and techniques of modern cryptography, classical cryptanalysis, probabilistic models of plaintext, monoalphabetic, polyalphabetic substitution, data encryption standard, public key systems, security aspect of computer networks
- *Topics in Applied Mathematics-Computer Science* – study random walk algorithms, important connection with physics such as heat equation, quantum algorithm
- *Introduction to Numerical Analysis*: *Linear Algebra* – analysis of numerical methods for linear algebraic systems and least square problems, orthogonalization methods, conditioned problems, compute eigenvalue and singular value
- *Discrete Mathematics and Graph Theory* – learn basic concepts in graph theory including tree, walks, paths , vertex and edge-coloring, planar graphs, flows, combinatorial algorithms, travelling salesman problem
- *Introduction to Analysis* – study real number system, numerical sequences, series, infinite limits of functions, continuity, differentiation
- *Elements of Complex Analysis* – learn complex numbers and functions, analytic functions, harmonic functions, elementary conformal mappings, complex integration, Power series, Cauchy's theorem, Cauchy's formula

Technical skills

Programming Languages
- C, C++, Java, Python, SQL, HTML

Software & Technologies
- Platforms: Linux, Microsoft Windows, Unix
- Tool & Applications: Matlab, Visual R Studio, Microsoft Word, Excel, PowerPoint, Vim, Latex, ShareLatex
- Objected Oriented Programming
- Install, run, troubleshoot Microsoft Windows
- Assemble, diagnose, troubleshoot Window PC hardware and devices

Mathematic
- Cryptography, Graph Theory, Search Algorithms, Complex Analysis, Numerical Analysis, Applied Mathematics

Projects

Black Jack Game | github.com/vxdao/finalproject
- Utilize Python and produce various random functions to properly shuffle
- Design the process to result output of hand and accordingly distribute bets across dealers and player

Tetris Game
- Apply Java classic GUI interface to create shapes of objects for the thread and the grid
- Implement key listener technique for commands (i.e. left, right, rotation) for next proposed location on the grid

Work & Volunteer Experience

Preuss School of University of California San Diego, Science Tutor   2/2017 - 3/2017
- Mentor 30+ middle school students in 4 science projects by observing their progress, help with cause and effect testing, make further suggestions for improvements
- Assist teacher on collecting students' project submissions and timekeeping

Preuss School of University of California San Diego, Soccer Coach Assistant   2/2017 – 3/2017
- Assist soccer coach, keep track of team attendance, coach individual athletes on proper techniques
- Communicate with students on soccer fields, give suggestion and advice for students to improve their moving, defending, attacking techniques

West Valley College, Mathematics Tutor   1/2014 - 1/2015
- Tutor 30+ students 1-on-1 with algebra, geometry, and calculus by writing out step-by-step examples
- Review key concepts for students to aid in solving homework, test preparation which resulted in an average 10% grade increase

References

Available upon request