HUNG DUC NGUYEN

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EDUCATION

Clark University **Worcester, MA** **Expected May 2018**

- **Bachelor of Arts**; Double Majors in Computer Science and Studio Art; Minor in Mathematics
- **Core courses GPA**: 3.70/4.00; **Dean's List**: All Semesters, 2014, 2015, 2016, 2017
- **Relevant Coursework:**
  Linear Algebra, Multivariate Calculus, Data Structures, Algorithms, Analysis of Programming Language, Assembly Language & Computer Organization, Probability & Statistics, Operating System, Software Engineering, Computer Networking, Database Management & Systems Design, Theory of Computation
  Online Courses: Machine Learning (Stanford), Full Stack Web Dev (HKUST)

WORK EXPERIENCE

Software Engineer Intern **Axispoint Inc., New York, NY** **May 2017 - Aug 2017**

- Wrote performance test for Sequelize, pg-promise library; reduced PostgreSQL database query time by 30%
- Built Scrum Poker, internal web app for 1 PM, 2 Scrum Masters, 6 Developers to make Agile planning sessions
- Designed clear, concise, easy-to-use UI helping users fasten their work process (ReactJS, jQuery, AdminLTE)
- Implemented database schema (users, sessions, stories, votes) and server-client protocols (NodeJS, Socket.io)
- Wrote unit, integration testing with Mocha, Chai and deployed Scrum Poker through AWS EC2

ADDITIONAL EXPERIENCE

DotA2 Winning Prediction **Coursework Project, Clark University** **April 2018 - Present**

- Build a Ruby on Rails web app with MySQL to pick 10 heroes/2 teams and know which team is likely to win
- Analyzed DotA2 into 3 phases, 10 missions, 20 tasks; Classify and rank 600 hero abilities by ranking algorithms
- Integrate all features into the Multivariate Regressions and train them by Machine Learning (Python Nympy)
- Expect the accuracy of prediction: 70% -> 90% (consider both teams are equally skilled and game sensed)

Chess AI Engine **Directed Study, Clark University** **August 2017 - Jan 2018**

- Built a JavaScript Chess AI searching good moves to the decision tree's depth 10 in average 2 sec/move
- Implemented AI algorithms, heuristics: Negamax, Alpha-beta pruning, Board Evaluation, Aspiration Window, Iterative Deepening, Principal Variation Search, Quiescent Search, Futility Pruning, Search Extensions
- Data structures for positions and good moves: Transposition Table, Killer Heuristic, History Heuristic
- Achieved ELO Rating: 2000 points (Average Chess players: 1100, Chess masters: 2200 - 2700)

IUCN Visualizer **Directed Study, Clark University** **July 2016 - July 2017**

- Built a Java app for scientists in the IU Conservation of Nature to conceptually visualize biological systems
- Integrated database parser for CSV files and developed features for graphs with database
- Designed a dynamic graph legend, updating constantly all information on the graph (JGraphX, XML, Sketch)
- Refactored, documented the full source code, improving the readability without affecting performance

Scheme Interpreter **Coursework Project, Clark University** **Sept 2016 - Jan 2017**

- Built a Scheme interpreter with C to parse and evaluate Scheme functional input
- Implemented the input functional parsing mechanism for pre-defined, user-defined, recursive functions
- Coded the evaluation method for arithmetic and logic operations to deal with the base case in recursion
- Designed an abstract cons-cell structure and s-expressions structure for nested-list data

TECHNICAL SKILLS

- **Programming:** Object-Oriented Design, Full-Stack Web Dev, Test-Driven Dev, Unit and Integration Testing
- **Languages:** Java, C, Python, HTML, CSS, JavaScript, JSON, XML, SQL, Assembly, Scheme, Pascal
- **Technologies:** REST API, PostgreSQL, SQLite, AJAX, jQuery, NodeJS, ReactJS, Socket.io, Sequelize, Mocha, Chai
- **Others:** Git, IntelliJ, Android Studio, Linux, PuTTY, Postman, Photoshop, Illustrator, InDesign, Animate