Yuchong Pan

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EDUCATION

Massachusetts Institute of Technology   Cambridge, MA
Ph.D., Applied Mathematics   *September 2021 –*

University of British Columbia   Vancouver, BC
B.Sc., Combined Honours Computer Science and Mathematics   *September 2017 – May 2021*

- **Overall Grade Average**: 94.4%
- **Coursework**: Combinatorial Optimization*, Submodular Optimization*, Tools for Modern Algorithm Analysis*, Applications of Linear Algebra in TCS*, Probability*, Stochastic Processes*, Complexity Theory*, Real Analysis*

*graduate courses

SELECTED EMPLOYMENT

University of British Columbia   Vancouver, BC
Research Assistant   *April 2021 – August 2021*

- **Cost and Congestion of Exotic Network Flows**: Studied new network flow models with side constraints imposed by new telecommunication technologies (e.g., IP routing, optical networks, etc.). This research assistantship is partially funded by Work Learn International Undergraduate Research Awards.

Microsoft   Vancouver, BC
Software Engineer Intern   *May 2020 – August 2020*

- **.NET Runtime IL Interpreter**: Resurrected the IL (intermediate language) interpreter inside .NET Runtime. Conducted performance analyses for the various configurations of the IL interpreter. [GitHub] [Presentation]

Microsoft   Redmond, WA
Software Engineer Intern   *June 2019 – August 2019*

- **.NET Core Uninstall Tool**: A guided tool that enables the controlled clean-up of a system such that only the desired versions of .NET Core SDKs and Runtimes remain. [GitHub] [Blog] [Documentation]
- **MSBuild Binary Log Query Language**: A domain-specific language extending XPath (XML Path Language) that provides multiple search operators for advanced queries on the target graph parsed from MSBuild binary logs.

SELECTED PROJECTS

- **THE Hack**: The largest hackathon in China with 500 participants, 2,000 applicants from over 400 schools and 8 countries; served as Co-Founder, Director of Technology, and Co-Director of Corporate Relations. [Website]
- **Gradual Octave**: Extended the Octave programming language with a gradual type system, incorporating benefits of both static and dynamic type systems. [Report] [GitHub]
- **MiniJava Compiler**: MiniJava is a subset of the Java language. Implemented a MiniJava-to-x64 compiler, including phases of frontend, intermediate representation, code generation, and optimization.

SELECTED AWARDS

- **Stanley M Grant Scholarship in Mathematics, University of British Columbia**   *2019, 2021*
- **Faculty of Science International Student Scholarship, University of British Columbia**   *2018, 2019, 2020*
- **Trek Excellence Scholarship, University of British Columbia**   *2018, 2019, 2020*
- **Science Scholar / Dean's Honour List, University of British Columbia**   *2018, 2019, 2020*
- **11th Place, ACM International Collegiate Programming Contest Pacific NW Region**   *2017*
- **Outstanding International Student Award, University of British Columbia**   *2017*
- **Silver Medal, China Team Selection Competition for International Olympiad in Informatics**   *2015*
- **Bronze Medal, Asia Pacific Informatics Olympiad**   *2015*
- **First Prize, National Olympiad in Informatics in Provinces**   *2013, 2014*

PROGRAMMING SKILLS

- **Languages**: C++, Python, Java, C#, Racket, Standard ML, Ruby, MATLAB, Go, JavaScript, MySQL, LaTeX
- **Technologies**: Django, Flask, Tornado, Microservices, Bootstrap, Vue.js, AngularJS, D3.js, Node.js, Marko.js, Ionic, Nginx, Redis, Docker, Amazon AWS, Microsoft Azure, .NET, Xamarin, Microsoft Build Engine (MSBuild)