

## Yuchong Pan

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| CONTACT<br>INFORMATION | +1 (604) 782-7439<br>panyuchong@gmail.com<br><a href="http://ypan.me">http://ypan.me</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| RESEARCH<br>INTERESTS  | Algorithms, combinatorics, optimization, theoretical computer science – especially combinatorial optimization, submodular optimization, network flow theory, network design, graph theory, theory of computation, theory of complexity.                                                                                                                                                                                                                                                                                                                                                              |
| EDUCATION              | <b>University of British Columbia</b><br>B.Sc., Computer Science and Mathematics, Combined Honours, expected 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| EMPLOYMENT             | <b>Microsoft Corporation</b><br>Software Engineer Intern, 2020<br>Software Engineer Intern, 2019<br>Software Engineer Intern, 2018<br><br><b>University of British Columbia</b><br>Undergraduate Teaching Assistant, 2020<br>Undergraduate Academic Assistant, 2019–2020<br>Undergraduate Teaching Assistant, 2019<br>Student Assistant, 2019<br>Undergraduate Teaching Assistant, 2018<br><br><b>Jisuanke</b><br>Teaching Researcher, 2018–2019<br>Lecturer, 2018–2019<br><br><b>Sogou, Inc.</b><br>Software Engineer Intern, 2017<br><br><b>InitialView</b><br>Software Engineer Intern, 2016–2017 |
| RESEARCH<br>EXPERIENCE | <b>University of British Columbia</b><br>The minimum-cost congestion of single-sink unsplittable flows (thesis), 2020–2021 <ul style="list-style-type: none"><li>◦ Advisor: F. Bruce Shepherd</li></ul> Gradual typing of recursive types, 2018–2020 <ul style="list-style-type: none"><li>◦ Advisor: Ronald Garcia</li></ul>                                                                                                                                                                                                                                                                        |
| TEACHING<br>EXPERIENCE | <b>University of British Columbia</b><br><i>Teaching Assistant</i><br>CPSC 311            Definition of Programming Languages, Fall 2020<br>CPSC 421/501      Introduction to Theory of Computing (graduate), Fall 2019<br>CPSC 121           Models of Computation, Fall 2018                                                                                                                                                                                                                                                                                                                       |

*Academic Assistant*  
CPSC 411

Introduction to Compiler Construction, Fall 2019–Spring 2020  
*Involved in the redesign of the course, supervised by William J. Bowman.*

## **Jisuanke**

*Lecturer*

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| Competitive Programming, Level 6 | Spring 2019 |
| Competitive Programming, Level 5 | Fall 2018   |
| Competitive Programming, Level 3 | Summer 2018 |

*Teaching Researcher*

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| Competitive Programming, Level 6 | Spring 2019 |
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## **VOLUNTEER EXPERIENCE**

### **Shaoxing No.1 High School**

Summer Coach (Competitive Programming), 2016  
Student Lecturer (Competitive Programming), 2013–2015

## **TALKS AND PRESENTATIONS**

- The Single-Source Unsplittable Flow Problem. UBC Computer Science. University of British Columbia. Online. 2020. [Note] [Survey]
- Perturbation-Stable Maximum Cuts. Algorithms Reading Group, UBC Computer Science. University of British Columbia. Online. 2020. [Slides]
- Unsplittable Flow Problem on Paths and Trees: Closing the LP Relaxation Integrality Gap (with Adam Jozefiak). UBC CPSC 531F Survey. University of British Columbia. Vancouver, BC. 2019. [Slides] [Survey]
- Introduction to Communication Complexity. Quantum Club Seminar. University of California, Santa Barbara. Santa Barbara, CA. 2019.
- Gradual Typing for Octave Language (with Ada Li, Kathy Wang, and Paul Wang). UBC CPSC 311 Project. University of British Columbia. Vancouver, BC. 2018. [Report]
- Some Math Notes (in Chinese). Competitive Programming Summer School. Shaoxing No. 1 High School. Shaoxing, China. 2016. [Slides]
- Graph Algorithms (in Chinese). Competitive Programming Summer School. Shaoxing No. 1 High School. Shaoxing, China. 2016. [Slides]
- Miller-Rabin Primality Test and Pollard's  $\rho$  Integer Factorization Algorithm (in Chinese). Competitive Programming Seminar. Shaoxing No. 1 High School. Shaoxing, China. 2015. [Slides]

## **HONORS AND AWARDS**

- Faculty of Science International Student Scholarship (CAD \$7,500), University of British Columbia, 2020.
- J Fred Muir Memorial Scholarship in Science (CAD \$200), University of British Columbia, 2020.
- Trek Excellence Scholarship (CAD \$4,000), University of British Columbia, 2020.
- Science Scholar, University of British Columbia, 2020.
- Dean's Honour List, University of British Columbia, 2020.
- Faculty of Science International Student Scholarship (CAD \$5,000), University of British Columbia, 2019.
- Dean of Science Scholarship (CAD \$350), University of British Columbia, 2019.
- Trek Excellence Scholarship (CAD \$4,000), University of British Columbia, 2019.
- Stanley M Grant Scholarship in Mathematics (CAD \$1,500), University of British Columbia, 2019.
- Programming Language Implementation Summer School Fellowship (€400), 2019.
- Science Scholar, University of British Columbia, 2019.
- Dean's Honour List, University of British Columbia, 2019.

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|                      | <ul style="list-style-type: none"> <li>◦ Faculty of Science International Student Scholarship (CAD \$10,000), University of British Columbia, 2018.</li> <li>◦ Dean of Science Scholarship (CAD \$425), University of British Columbia, 2018.</li> <li>◦ Trek Excellence Scholarship (CAD \$4,000), University of British Columbia, 2018.</li> <li>◦ Marie Kendall Memorial Scholarship in Science (CAD \$925), University of British Columbia, 2018.</li> <li>◦ Joel Harold Marcoe Memorial Scholarship (CAD \$150), University of British Columbia, 2018.</li> <li>◦ Science Scholar, University of British Columbia, 2018.</li> <li>◦ Dean's Honour List, University of British Columbia, 2018.</li> <li>◦ Outstanding International Student Award (CAD \$6,000), University of British Columbia, 2017.</li> <li>◦ Silver Medal, China Team Selection Competition for International Olympiad in Informatics, China Computer Federation, 2015.</li> <li>◦ Bronze Medal, Asia Pacific Informatics Olympiad, China Computer Federation, 2015.</li> <li>◦ First Prize, National Olympiad in Informatics in Provinces (Advanced Division), China Computer Federation, 2014.</li> <li>◦ First Prize, National Olympiad in Informatics in Provinces (Advanced Division), China Computer Federation, 2013.</li> </ul> |
| PROFESSIONAL SERVICE | <i>Journal Review</i><br>SIAM Journal on Discrete Mathematics (SIDMA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| SELECTED COURSEWORK  | <i>Mathematics</i><br>Probability (graduate)<br>Stochastic Processes (graduate)<br>Submodular Optimization (graduate)<br>Combinatorial Optimization (graduate)<br>Measure Theory and Integration (graduate)<br>Introduction to Theory of Computing (graduate)<br>Tools for Modern Algorithm Analysis (graduate)<br>Beyond Worst-Case Analysis (seminar)<br>Real Variables I & II<br>Introduction to Group Theory<br><br><i>Computer Science and Engineering</i><br>Numerical Computation<br>Introduction to Software Engineering<br>Definition of Programming Languages<br>Introduction to Compiler Construction<br>Computer Hardware and Operating Systems<br>Intermediate Algorithm Design and Analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ACADEMIC TRAINING    | <ul style="list-style-type: none"> <li>◦ Second Programming Language Implementation Summer School. Bertinoro, Italy. 2019.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| RELEVANT SKILLS      | Languages:     English, Mandarin<br>Programming: $\text{\LaTeX}$ , Racket, Standard ML, JavaScript, C/C++, Java, C#, Python, Ruby, MATLAB, Go, MySQL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| LAST UPDATED         | December 1, 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |