Milin Kodnongbua

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Education

- **University of Washington, Seattle** — Seattle, Washington
  Ph.D. in Computer Science — *Sep. 2022 - Jun. 2028*
  - Advisor: Prof. Adriana Schulz at GRAIL
  - Research Interests: Computational Design and Fabrication
- **University of Washington, Seattle** — Seattle, Washington
  Bachelor of Science in Computer Science and Economics — *Sep. 2018 - Jun. 2022*
  - GPA: 3.94/4.00 (Magna Cum Laude); Departmental Honors in Computer Science

Publications

- **Computational Design of Passive Grippers**
  Milin Kodnongbua, Ian Good, Yu Lou, Jeffrey Lipton, Adriana Schulz. ACM Transactions on Graphics, 41(4) (SIGGRAPH 2022).

Honors

- **10th Place**, ICPC North America Championship 2022 — Mar. 2022
  - First-to-solve Problem A
  - Advanced to ICPC World Finals 2023
- **1st Place**, ICPC Pacific Northwest Regional 2021 — Mar. 2022
- **4th Place**, ICPC Pacific Northwest Regional 2020 — Mar. 2021
- **4th Place**, ICPC Pacific Northwest Regional 2019 — Nov. 2019
- **9th Place**, ICPC Pacific Northwest Regional 2018 — Nov. 2018
- **Bronze Medal**, International Olympiad in Informatics 2018 — Sep. 2018
- **Bronze Medal**, Asia-Pacific Informatics Olympiad 2018 — May. 2018

Experience

- **University of Washington** — Seattle, Washington
  Research and Teaching Assistant — *Apr. 2020 - Jun. 2022*
  - **Research Assistant – Computational Design of Passive Grippers**: Developed an algorithm to design a 3D printable passive gripper and find a valid robot trajectory to grab any given object. Our project enables assembly lines to quickly and easily be re-purposed to produce new products in need. Project site: https://homes.cs.washington.edu/~milink/passive-gripper/
  - **Research Assistant – Knitting Simulation**: Implemented a knitted cloth simulator in C++, which is typically used in animations and games. The simulator works at the yarn level, providing matching results with real knitted clothes. Implemented a conversion pipeline for transforming a 3D stitch mesh model to a collection of yarn curves to be used with the cloth simulator.
  - **Teaching Assistant - Computer Graphics**: (3 quarters). Ported course project from C++ to Unity and C#, and re-wrote project description. Tutored students, held office hours, graded homework assignments and projects.
  - **Teaching Assistant - Introduction to Computer Networks**: (3 quarters). Tutored students, held office hours, graded homework assignments and projects.

Projects

- **Emnote – Handwritten Note-taking Application** — *Sep. 2018 - Present*
  Designed and implemented a handwritten note-taking app for Windows, a OneNote alternative with pages and nice PDF imports. The app was implemented in C#, XAML, and UWP; and is available at `https://emnote.app` and at the Microsoft Store with 5,000+ downloads.
- **Loop Termination Branch Predictor for RISC-V Processor** — *Apr. 2021 - Jun. 2021*
  Implemented the Loop Termination Buffer and integrated with BlackParrot, an open source multicore RISC-V processor. The buffer correctly predicts the end of the inner for-loops with constant number of iterations and is able to improve the overall branch prediction accuracy.
- **5-Stage Pipelined RISC-V 32I Processor** — *Jan. 2021 - Mar. 2021*
  Implemented from scratch a 5-stage pipelined RISC-V 32I Processor in SystemVerilog. The implementation was tested on an FPGA and was able to run arbitrary C code compiled to RISC-V binaries.

- **Alumni Directory Website** *Jun. 2020 - Dec. 2020*
  Designed and developed an alumni directory website for high school using React and Firebase. Alums can enter their education and career in the website. Current students can custom search alums with specific attributes that best suit their goals. The site is available at `kvis-alumni.web.app`.
- **Automatic Text Summarizer** *Sep. 2016 - Nov. 2016*
  Developed a deep neural network model that automatically summarizes documents into a single paragraph using Python. The model uses features such as word frequency, position, and part of speech to determine the importance of a sentence. It helped screening research papers during my high school.

Skills

- **Languages**: C/C++, C#, Javascript, Typescript, Python, Java, HTML, CSS, Latex, SystemVerilog, R
- **Tools/Libraries**: Git, CMake, OpenMP, CGAL, Libigl, PyTorch, React, Jekyll, Firebase
- **General**: Algorithms, Data Structures, Web Programming, Deep Learning