

## SUMMARY OF QUALIFICATIONS

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Applied Mathematics and Bioengineering undergraduate (graduation June 2021) focused on software engineering, data science, and algorithms and modeling. Familiar with Python, Java, MATLAB, data visualization, and other technologies through strong research experience and extracurricular involvement.

## EDUCATION

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- **University of Washington** Seattle, WA  
*B.S. in Applied and Computational Mathematical Sciences and in Bioengineering; GPA: 3.80* *Aug 2017 – 2021*
  - **Honors:** Dean's List (all quarters), Stratos–Stephen Endowed Scholar, Robert B. Rodal Endowed Scholar

## SKILLS

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- **Languages:** Java, Python, MATLAB, R,  $\text{\LaTeX}$ . *Experience with* HTML5, CSS3, JavaScript, C/C++, SQL

## EXPERIENCE

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- **NanoString Technologies** Seattle, WA  
*Research Intern, Project Lead: Jaemyeong Jung, Ph.D* *Aug 2019 – Present*
  - Simulated and refined the accuracy of UV light illumination on complicated input masks through algorithm development and modeling to improve digital spatial profiling technology in the GeoMX device line
  - Ported existing codebase from C#(OpenCV) to MATLAB for increased readability and scalability
- **Yager Lab, University of Washington** Seattle, WA  
*Undergraduate Researcher, Full-Time Paid Research Assistant (Summer 2019)* *Sep 2018 – Present*
  - Streamlined export, analysis, and visualization of absorbance and fluorescence data of various assays from plate reader through custom MATLAB scripts and algorithms
  - Modeled 3-D diffusion of target biomolecules into hydrogels in aqueous solution with COMSOL
- **Biomedical Informatics & Medical Education, University of Washington** Seattle, WA  
*Paid Research Assistant, Principal Investigator: Annie Chen, Ph.D* *Jan 2019 – Jun 2019*
  - Collaboratively created an interactive and dynamic visualization dashboard via D3 and React to display data collected from mental health intervention app suites for the use of clinicians
  - Implemented backend data management such as clustering and reorganization with Python to automatically populate dashboard with user-friendly data
- **Dey Lab, Fred Hutchinson Cancer Research Center** Seattle, WA  
*Undergraduate Researcher, Principal Investigator: Neelendu Dey, M.D.* *Jun 2018 – Mar 2019*
  - Subset and analyzed gut microbiome metagenomes with target genes from BLAST to explore core relationships with colorectal cancer in Python
  - Explored multiomic datasets in R, focusing on secondary bile acid biosynthesis. Implemented data visualization packages such as ggplot2 for presentation of results
- **IslandWood** Bainbridge Island, WA  
*Data Analysis Intern, Project Lead: Corll Morrissey, M.A.Ed* *Jul 2017 – Aug 2017*
  - Analyzed relationships between race/income and camp attendance across 10 years of demographic data via multivariate analysis, ANOVA, and correlation tests in R to prove an absence of bias
  - Recommended solutions to community access problems in final presentation to IslandWood board of education

## PUBLICATIONS

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A. T. Chen, J. H. Chang, **S. Hallinan**, and D. C. Mohr, “Mapping User Trajectories: Using Participant Flows to Examine Behavior and Outcomes in Digital Health Intervention Data”, presented at the Visual Analytics in Healthcare, 2019 (in conjunction with IEEE VIS 2019)

## COURSEWORK

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- **Computer Science:** Introductory Java, Programming Languages, Hardware Software Interface, Synthetic Biology I & II
- **Mathematics:** Linear Algebra, Discrete Mathematical Modeling, Computational Methods for Data Analysis