

Teng-Jui Lin

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Education

University of Washington | Seattle, WA, USA Sep 2019 – Present

- B.S. in Chemical Engineering, Nanoscience and Molecular Engineering Option, with Departmental Honors
- Minor in Applied Mathematics and Chemistry
- Expected Graduation: June 2023
- GPA: 3.97/4.0, ChemE GPA: 4.0/4.0

Brown University | Providence, RI, USA Jun 2018 – Aug 2018

- Pre-Baccalaureate Program: Neuroscience, Cell and Molecular Biology

Professional Experience

Undergraduate Research Assistant Nov 2020 – Present

Department of Chemical Engineering, University of Washington, PI: Elizabeth Nance

- Quantified microglia morphology across 3 neuroinflammatory rat models (20,000+ cells) with immunofluorescent image processing and unsupervised machine learning
- Developed 80% more efficient Python application programming interface for morphological analysis and modular integration to immunofluorescent image analysis workflow
- Tile-scanned 12 murine breast cancer tissue slices using confocal microscope (24.5 hr)
- Analyzed number of publications that used immunofluorescent images at 450+ combinations of variables using PubMed web scrapping in Python, 93% more efficient than manual search

Summer Undergraduate Research Scholar Jun 2022 - Aug 2022

STROBE NSF Science and Technology Center on Real-Time Functional Imaging

Department of Physics, Florida International University, PI: Jin He

- Fabricated, functionalized, and surface-modified gold nanorods improving tissue conductivity
- Characterized gold nanorods using UV-visible spectroscopy and Raman spectroscopy
- Measured contractile force of cardiac tissues by analyzing brightfield microscopy video data and processed confocal microscopy images of cardiomyocytes with Python

Honors & Awards

Poster Competition 2nd Place | American Institute of Chemical Engineers 2022

Conference Travel Award | Undergraduate Research Program, University of Washington 2022

Future Leader in ChemE | Dept. of Chemical and Biomolecular Engineering, NC State University 2022

Dan Evans Term Scholarships | Dept. of Chemical Engineering, University of Washington 2021 & 2022

ChemE Hackathon Team 1st Place | Dept. of Chemical Engineering, University of Washington 2022

Mary Gates Research Scholarship | Mary Gates Endowment for Students, University of Washington 2021

ChemE Hackathon Team 3rd Place | Dept. of Chemical Engineering, University of Washington 2021

Presentations

Presenting Author[^]

Oral Presentations

3. H. Helmbrecht[^], E. Nance, K. Decker, **T.-J. Lin**, S. Janakiraman, M. Onodera. Analysis of Microglia Morphology across Different Neuroinflammatory Rat Models. *AICHE Annual Meeting, Phoenix, AZ, USA*. 13 Nov 2022. [Link](#).
2. **T.-J. Lin**[^], H. Helmbrecht, E. Nance. Incorporating Visually Aided Morpho-Phenotyping Image Recognition into robust microglial shape analysis. *Undergraduate Research Symposium, University of Washington, Seattle, WA, USA*. 20 May 2022. [Link](#).

1. **T.-J. Lin**[^], H. Helmbrecht, E. Nance. Robust microglial shape analysis using Visually Aided Morpho-Phenotyping Image Recognition. *AIChE Pacific Northwest Student Regional Conference, Seattle, WA, USA*. 23 Apr 2022.

Poster Presentations

4. **T.-J. Lin**[^], H. Helmbrecht, E. Nance. Quantifying microglia morphology across neuroinflammatory rat models with unsupervised machine learning. *Southern California Conference for Undergraduate Research, Malibu, CA, USA*. 19 Nov 2022. [Link](#).
3. **T.-J. Lin**[^], H. Helmbrecht, E. Nance. Quantifying microglia morphology across neuroinflammatory rat models with unsupervised machine learning. *AIChE Annual Student Conference, Phoenix, AZ, USA*. 13 Nov 2022. [Link](#).
2. **T.-J. Lin**[^], H. Helmbrecht, E. Nance. Quantifying microglia morphology across neuroinflammatory rat models with unsupervised machine learning. *Future Leaders in Chemical Engineering Award Symposium, North Carolina State University, Raleigh, NC, USA*. 24 Oct 2022. [Link](#).
1. **T.-J. Lin**[^], A. Rubfiaro, G. Ghimire, J. He. Fabrication and characterization of functionalized gold nanorods for improving engineered cardiac tissue maturation. *Center for Diversity and Student Success Summer Research Symposium, Florida International University, Miami, FL, USA*. 29 July 2022.

Mass Media Appearances

1. (Insights letter) R. Tang, T. Bharani, J. Ding, K. Li, J. Wen, S. D. Gopinath, **T.-J. Lin**, J. X. J. Luo, Q. Wen, K. Davis, N. van Rhijn, Name withheld, S. M. Anderson, R. J. Patel, S. Sarnala, F. S. Oda, G. Singh, N. R. Kothapalli, N. Scott, J. R. Powell, S. N. Kirshner. When internships disappoint. *Science*. 378, 22–24 (2022). DOI: [10.1126/science.ade6397](https://doi.org/10.1126/science.ade6397).

Teaching Experience

Calculus Teaching Assistant

Sep 2018 – May 2019

Kinglee High School

- Lectured 4 hours/week to 5 students in alignment with CollegeBoard-certified AP Calculus AB curriculum with interactive classroom activities to clarify complex concepts and common confusions
- Designed and graded bidaily concept checks, homework, and quizzes with tight deadlines under supervision

Service

Undergraduate Research Leader

Sep 2022 – Present

Undergraduate Research Program, University of Washington

- Engaged 120+ students with diverse backgrounds from 6 first-year interest groups through interactive outreach presentations and served on a panel interfacing with 50+ students

Webmaster

Apr 2022 – Present

American Institute of Chemical Engineers (AIChE), University of Washington

- Designed, managed, and updated official website and social media interfacing with 200+ students
- Facilitated coordination of ChemE BBQ event and graduation ceremony with 300+ cumulative engagement

Secretary

May 2021 – Present

Women in Chemical Engineering, University of Washington

- Composed biweekly newsletters to 400+ members for diversity-oriented events, resources, and highlights
- Facilitated coordination of major events 300+ cumulative student and faculty engagement: Annual Industry event, Veteran's Day event, Wiki-edit-a-thon, International Women's Day event, and monthly general meetings

Research and Development Officer

Apr 2020 – Jun 2021

Chinese Students and Scholars Association, University of Washington

- Designed, crafted, and edited posters and videos for major events with average 100+ student engagement
- Assisted in maintenance of official blog and website to provide academic resources for student success

Maple Hall Council Sustainability Representative**Oct 2019 – Mar 2020***Housing and Food Services, University of Washington*

- Led weekly committee meetings of 10 people and planned campus-wide waste-sorting competition
- Liaise sustainability feedback and initiatives through weekly hall council and sustainability group meetings