ASHLEY TSANG

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EDUCATION

Johns Hopkins University, Baltimore, MD 2022–Present
– M.S.E. in Biomedical Engineering

Johns Hopkins University, Baltimore, MD 2018–2022
– B.S. in Biomedical Engineering and Computer Science

PUBLICATIONS

[1] Biopsy Needle Accessory
Robert Liddell, Deborah Weidman, **Ashley Tsang**, Gohta Aihara, Tatiana Pereira, Bibhav Poudel, Jacob Desman, Katherine Kovrizhkin, Sean Darcy
US Patent 63/249,680, filed Sept. 29, 2021. Patent Pending.

[2] Inferring cellular and molecular processes in single-cell data with non-negative matrix factorization using Python, R, and GenePattern Notebook implementations of CoGAPS
Jeanette Anna Irene Johnson*, **Ashley Tsang***, Jacob T Mitchell, Emily F Davis-Marcisak, Thomas Sherman, Ted Liefeld, Melanie Loth, Loyal Goff, Jacquelyn Zimmerman, Ben Kinny-Köster, Elizabeth Jaffee, Pablo Tamayo, Jill Mesirov, Michael Reich, Elana J Fertig, Genevieve L Stein-O'Brien
Under review at Nature Protocols, 2022
(*equal contribution)

[3] Deep Learning Model for Static Ocular Torsion Detection Using Synthetically Generated Fundus Images
Chen Wang, Yunong Bai, **Ashley Tsang**, Yuhan Bian, Yifan Gou, Yan X. Lin, Matthew Zhao, Tony Y. Wei, Jacob M. Desman, Casey Overby Taylor, Joseph L. Greenstein, Jorge Otero-Millan, Tin Yan Alvin Liu, Amir Kheradmand, David S. Zee, Kemar E. Green
Under review at Translational Vision Science and Technology, 2022

[4] Adequacy of samples obtained via percutaneous core-needle rebiopsy for EGFR T790M molecular analysis in patients with non-small cell lung cancer following acquired resistance to first-line therapy: A systematic review and meta-analysis
Bibhav Poudel, Jacob Desman, Gohta Aihara, Deborah I Weidman, **Ashley Tsang**, Katherine Kovrizhkin, Tatiana Pereira, Siddharth Arun, Tejus Pradeep, Shababa Matin, Robert P Liddell
Cancer Treatment and Research Communications, 2021

EXPERIENCES

PneuTech, Co-Founder and Lead 2019–Present
– Collaborate with Johns Hopkins Hospital clinicians and JHU engineering students to develop novel medical device for biopsy procedures
– Raised over $36,000 in non-dilutive funding; Rice Business Plan Competition Finalists (2022), VentureWell E-Team Cohort (2022), 1st Place CMU Venture Challenge (2021), 2nd Place JHU Business Plan Competition (2021), Runner-Up JHU FastForward Fuel Demo Day (2021)

Fertig Lab @ JHU, Research Assistant 2021–Present
– Created PyCoGAPS, a Python implementation of CoGAPS algorithm for gene set analysis
– Developed user-friendly implementations with Docker and GenePattern, and reduced runtime by 2.8x

Department of Applied Mathematics and Statistics @ JHU, Teaching Assistant Fall 2020
- Held teaching assistant responsibilities, including leading weekly discussion sections, for EN.553.171 Discrete Mathematics

Delineo Disease Modeling, Software Development Co-Lead 2020
- Led team of 17 JHU students to develop localized prediction model for the spread of COVID-19 and other diseases
- Leveraged machine learning methods to predict spread based on SafeGraph geolocation data

Malone Center for Engineering in Healthcare @ JHU, Research Assistant 2019-2020
- Implemented U-Net to segment the pupil across video frames of cataract surgical procedures

SKILLS

Programming Languages
- Python, Java, C/C++, MATLAB, R

Machine Learning Frameworks
- PyTorch, NumPy