

Simon Liu

Postbaccalaureate Fellow, National Human Genome Research Institute.
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Summary

I am a postbaccalaureate IRTA fellow in the Medical Genomics Unit at the 🏢 National Human Genome Research Institute, interested in deep learning algorithms that improve patient outcomes. My recent work involves applying natural language processing to public and private datasets to build models for extracting patient and language annotators.

Education

B.S., Biomedical Engineering, Johns Hopkins University, Baltimore, MD. 08/2017 - 05/2021
Also completed B.S. major requirements for Computer Science
Honors: Joseph F. Strohecker Scholarship, Upsilon Pi Epsilon, Dean's list, general & departmental honors
GPA: 3.69

Research Experience

Postbaccalaureate Fellow, National Human Genome Research Institute, Bethesda, MD. 07/2021 - present
With Benjamin Solomon

Software Engineer, Neuroplastic Surgery Research Laboratory, Johns Hopkins University, Baltimore, MD, USA. 02/2020 - 05/2021
With Chad Gordon.
Received Provost's Undergraduate Research Award 2020-21 [award] [news]

Research Analyst, School of Medicine, Johns Hopkins University, Baltimore, MD, USA. 12/2018 - 03/2020
With Susan Hutfless

Laboratory Assistant, STAR-ORC, University of Maryland School of Medicine, Baltimore, MD, USA. 07/2018 - 03/2020
With Junfang Wu

Volunteer Experience

Care Coordinator, Pan Asian Volunteer Health Clinic, Chinese Culture and Community Service Center, Gaithersburg, MD. 10/2021 - present
With Mo-Ping Chow and Yaoyao Zhu

Teaching Experience

Course Assistant, Department of Computer Science, Johns Hopkins University, Baltimore, MD, USA. 08/2020 - 05/2021
With Kwame Kuten

Publications

A list is also available on Google Scholar and Publons.

Journal Articles

Hutfless, S., Jasper, R. A., Tilak, A., Ghosh, T., Kedia, S., **Liu, S.**, Urrunaga, N. H., Josephson, M., Narang, A., Miller, S., Chen, P.-H., Joseph, S., & Brant, S. R. (2022). A systematic review of crohn's disease case definitions in administrative or claims databases. *Inflammatory Bowel Diseases*. <https://doi.org/10.1093/ibd/izac131> [pdf] J-5

Ledgister Hanchard, S. E.*, Dwyer, M. C.*, **Liu, S.***, Hu, P., Tekendo-Ngongang, C., Waikel, R. L., Duong, D., & Solomon, B. D. (2022). Scoping review and classification of Deep Learning in Medical Genetics. *Genetics in Medicine*. <https://doi.org/10.1016/j.gim.2022.04.025> *Co-first authors. [pdf] J-4

Duong, D., Hu, P., Tekendo-Ngongang, C., Hanchard, S. E., **Liu, S.**, Solomon, B. D., & Waikel, R. L. (2022). Neural networks for classification and image generation of aging in genetic syndromes. *Frontiers in Genetics*, 13. <https://doi.org/10.3389/fgene.2022.864092> [pdf] J-3

	Li, Y., Ritzel, R. M., He, J., Cao, T., Sabirzhanov, B., Li, H., Liu, S. , Wu, L. J., & Wu, J. (2021). The voltage-gated proton channel Hv1 plays a detrimental role in contusion spinal cord injury via extracellular acidosis-mediated neuroinflammation. <i>Brain, behavior, and immunity</i> , 91, 267–283. https://doi.org/10.1016/j.bbi.2020.10.005 [pdf]	J-2
	Li, Y., Ritzel, R. M., Khan, N., Cao, T., He, J., Lei, Z., Matyas, J. J., Sabirzhanov, B., Liu, S. , Li, H., Stoica, B. A., Loane, D. J., Faden, A. I., & Wu, J. (2020). Delayed microglial depletion after spinal cord injury reduces chronic inflammation and neurodegeneration in the brain and improves neurological recovery in male mice. <i>Theranostics</i> , 10(25), 11376–11403. https://doi.org/10.7150/thno.49199 [pdf]	J-1
Conference Papers	Kenet, A., Mahadevan, E., Elangovan, S., Yan, J., Siddiq, K., Liu, S. , Ladwa, A., Narayanan, R., Dakkak, J., Benassi, T., Ng, K., & Manbachi, A. (2020). Flexible piezoelectric sensor for real-time image-guided colonoscopies: a solution to endoscopic looping challenges in clinic. <i>Proc. SPIE 11315, Medical Imaging 2020: Image-Guided Procedures, Robotic Interventions, and Modeling</i> , 1131520 (16 March 2020). https://doi.org/10.1117/12.2548873 [pdf]	C-1
Meeting Abstracts	Patel, R., Palamuttam, N., Choi, Y., Diamreyan, M., Liu, S. , Park, S.J., Salazar, S., & Goeddel, L. (2021). Intraoperative hypotension before critical care admission is common but not associated with in hospital mortality in non-cardiac surgery. <i>Anesthesia & Analgesia</i> , 132(5S):859-862. https://doi.org/10.1213/01.ane.0000803544.47940.c7 [pdf]	A-3
	Hutfless, S. M., Chu, D., Liu, S. , & Kalloo, A. N. (2020). Predictors of ERCP-associated infections in outpatient hospitals. <i>Gastrointestinal Endoscopy</i> , 91(6). https://doi.org/10.1016/j.gie.2020.03.3314 [pdf]	A-2
	Hutfless, S. M., Chen, P.-H., Miller, S. D., Josephson, M., Joseph, S., Urrunaga, N., Kedia, S., Liu, S. , Arya, N., Hobstetter, L., Persad, P., Yeretssian, G., & Brant, S. R. (2020). Would K50* by any other name smell so sweet? A systematic review of claims-based Crohn's disease case definitions. <i>Gastroenterology</i> , 158(6). https://doi.org/10.1016/s0016-5085(20)31712-1 [pdf]	A-1
Presentations	Liu, S. , Ledgister Hanchard, S., Dwyer, M.C., Hu, P., Tekendo-Ngongang, C., Waikel, R.L., Duong, D., & Solomon, B.D. Applications of deep learning in medical genetics. Poster presented at: NIH Virtual Postbac Poster Day 2022; Bethesda, MD. [poster] [pdf]	P-1
Selected Honors	Linda Trinh Memorial Award , Johns Hopkins University, Baltimore, MD, USA Project: COVID-19 PPE Manufacturing Proposal: Consortium for 3D-Printed Headbands for Face Shields [blog] [news] With Y. Bai, J. Feitelberg, K. Hu, S. Kumar, K. Leo, J. Li, C. Shallal, and N. Zhang	05/2021
	Intuitive Surgical Best Project Award Runner Up , Deep Learning course, Johns Hopkins University, Baltimore, MD, USA. Project: Detection and Segmentation of Pneumothoraces in Chest X-ray. [report] [ppt] [award] With F. Shao, Y. Huang, and A. Harmalkar.	12/2020
	Provost's Undergraduate Research Award , Johns Hopkins University, Baltimore, MD, USA. Project: Implementing Electronic Beam Steering in an Implantable Ultrasound Device [award] [news] With Chad Gordon.	11/2020
	Upsilon Pi Epsilon , Johns Hopkins University, Baltimore, MD, USA. International Honor Society for the Computing and Information Disciplines	10/2020
	Joseph F. Strohecker Scholarship , Johns Hopkins University, Baltimore, MD, USA.	11/2017
	Maryland Seal of Biliteracy , Maryland State Department of Education, Rockville, MD, USA.	06/2017
Selected Press	Stokel-Walker, Chris. "Amid war fears, archivists are racing to preserve Ukraine's internet" <i>Input Mag.</i> February 18, 2022.	2022
	Calabresi, Kaitlyn. "Interview with Health 3D" <i>TCO Labs.</i> November 20, 2019.	2019
	Sangana, Neha. "Conference highlights student startups in Md." <i>The Johns Hopkins News-Letter.</i> November 15, 2018.	2018
Selected Coursework	Computer Integrated Surgery I Computer Integrated Surgery II Machine Learning Machine Learning: Deep Learning Biomedical Data Science	

Precision Care Medicine I
Precision Care Medicine II
Foundations of Computational Biology and Bioinformatics

Extracurricular Experience	Vice President of Finance , Alpha Kappa Psi, Rho Psi Chapter, Baltimore, MD, USA	11/2019 - 12/2020
	Pledge Educator , Alpha Kappa Psi, Rho Psi Chapter, Baltimore, MD, USA	05/2019 - 11/2019
	Head of Manufacturing , Health 3D, LLC, Baltimore, MD, USA.	04/2018 - 05/2021

Metadata

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