

Bryant Duong

CONTACT INFORMATION	Philadelphia, PA 19104 Phone: (626) 329-6130	Email: bryanttduong@gmail.com Website: bryantduong.github.io
EDUCATION	University of Pennsylvania Masters in Computer and Information Technology Coursework: Algorithms and Computation, Imaging Informatics, Statistics for Data Science, Artificial Intelligence, Principles of Deep Learning University of California, Davis MBA University of California, Berkeley BA in Cognitive Science	Expected Dec. 2024 2022 2018
RESEARCH EXPERIENCE	The Wistar Institute <i>Research Assistant</i> Principal Investigator: Noam Auslander <ul style="list-style-type: none">Developed exploratory KNN and bagging regressor models to associate melanoma mutations with gain of function and loss of function from AlphaMissense structural embeddingsPlotted survival curves and calculating hazard ratios for ER+ ovarian cancer patients and feature selecting gene signatures using genetic algorithm.Assisted with analysis on HLA serotypes and sequencing data to provide insight into mechanistic support for protein association using netMHCpan I/II National Library of Medicine, National Institutes of Health <i>Graduate Data Science Summer Program — Research Intern</i> Principal Investigator: Zhiyong Lu Mentor: Qingyu Chen <ul style="list-style-type: none">Pretrained BERT large language model for domain specificity on clinical case notes and biomedical literature to capture patient representationAssisted another student in debugging and extending DeepSeeNet to train on AREDS 2 database	December 2023 — present June 2023 — August 2023
POSTERS	Lucas A, Reale M, Duong B , Zhang Y, Wickramasinghe J, Amaravadi R, Mitchell T, Huang A, Auslander N. "Exploring Novel Associations Between Bacterial Proteins and Clinical Response to Immunotherapy in Melanoma Patients". 2024 Jun 24-26. Presented at The University of Pennsylvania 15th Annual Cancer Biology Retreat. Skytop, PA. [Poster] Duong B , Chen Q, Lu Z. "Foundational Models to Capture Patient Representation". 2023 Aug 24-26. Presented at 2024 NIH Summer Poster Day. Bethesda, MD. [Poster]	
PREPRINTS	Tsingas K*, Thomas M*, Duong B* , Xiao M, Wickramasinghe J, Chen Y, Reale M, Thacker G, Li H, Mou H, Ramirez-Salazar E, Villanueva J, Xu X, Flowers A, Karakousis GC, Miura JT, Mitchell TC, Amaravadi RK, Schuchter LM, Liu S, Long Q, Hoon DSB, Ramos RI, Bustos MA, Gershenwald JE, Simon JG, Wargo JA, Davies MA, Lu Y, Mills GB, Cohen S, Lawless A, Sharova T, Frederick DT, Flaherty KT, Hacohen N, Boland GM, Auslander N, Herlyn M. "The Landscape of Gain and Loss of Function Mutations in Melanoma". 2024 Oct 3 (under review at <i>Nature Communications</i>)	

Chen Q, Keenan TD, Agron E, Allot A, Guan E, **Duong B**, Elsayy A, Hou B, Xue C, Bhandari S, Broadhead G, Cousineau-Krieger C, Davis E, Gensheimer WG, Grasic D, Gupta S, Haddock L, Konstantinou E, Lamba T, Maiberger M, Mantopoulos D, Mehta MC, Nahri AG, AL-Nawafih M, Oshinsky A, Powell BE, Purt B, Shin S, Stiefel H, Thavikulwat AT, Wroblewski KJ, Chung TY, Cheung CMG, Cheng CY, Chew EY, Hribar MR, Chiang MF, Lu Z. "Towards Accountable AI-Assisted Eye Disease Diagnosis: Workflow Design, External Validation, and Continual Learning". 2024 Sep 23. arXiv. doi: 10.48550/arXiv.2409.15087. (submitted to *New England Journal of Medicine, Artificial Intelligence*) [[Preprint](#)]

* denotes equal contribution

INDUSTRY EXPERIENCE	UnitedHealth Group (Optum) , Remote	2019 — present
	<i>Senior Software Engineer/Software Engineer/Associate Software Engineer</i> <ul style="list-style-type: none"> • Oversaw and developed 4 data visualization dashboards for IT support ticket intake and service availability/data processes (e.g. Amundsen) • Applying exploratory data analysis techniques, data cleaning methods, and natural language processing techniques to better represent over 100,000 IT support ticket issues • Maintained and implemented Apache Airflow using Python to automate the scheduling of our production and non-production pipelines, consisting of over 80,000 jobs written as Windows batch, Linux shell scripts, and IBM Mainframe JCL • Delegated daily tasks to 10 junior engineers in an Agile workflow and gave feedback for technical presentations to senior leadership 	
	National Security Agency , Fort Meade, MD	2015 — 2018
	<i>Metadata Analyst</i> <ul style="list-style-type: none"> • Maintained a TS/SCI clearance • Designed and developed a metadata extraction module for digital communication protocols • Performed analysis on a wide variety of raw traffic to query database results effectively 	
AWARDS	UC Berkeley Regents' and Chancellor's Scholarship	2015 — 2018
	Stokes Educational Scholarship	2015 — 2018
ACTIVITIES	UnitedHealth Group (Optum)	2019 — present
	<i>Interviewer/Mentor - Technology Development Program</i> <ul style="list-style-type: none"> • Led 4 consecutive teams of undergraduate summer interns that modernized existing data pipelines and file processing applications • Conducted over 50 technical interviews for undergraduate and graduate-level junior software engineer candidates 	
	Encorps	2021 — 2022
	<i>STEMx Tutor</i> <ul style="list-style-type: none"> • Taught math to dedicated students for 2–3 hours a week in underprivileged schools in Los Angeles 	
	IvyMax	2015
	<i>Microfinance Rural Poverty Alleviation Scholar</i> <ul style="list-style-type: none"> • Helped teach students basic math in Da Gou Yan Village in Ningxia, China • Proposed a microloan plan to help alleviate farmer costs and expenses 	

TECHNICAL SKILLS	Programming	<p>Expert: Python, C/C++, SQL</p> <p>Experienced: Java, Go</p> <p>Novice: R, Javascript/React</p>
	Tools	<p>Expert: git, command line & bash, HPC (Slurm), REST APIs, pytest, scikit-learn, PyTorch, numpy, pandas, Unit Testing (codeQL, pytest)</p> <p>Experienced: LaTeX, HuggingFace, TensorFlow, cloud computing (Azure, Kubernetes), Kanban/Jira, Jenkins, Prometheus, Docker, Postman, Linux, netMHCpan</p> <p>Novice: Cytoscape, networking and security, vulnerability finding/reverse engineering</p>
	Techniques	Regression, machine learning, deep learning, principal component analysis, feature selection, package development, unit testing
	Visualization	matplotlib, seaborn, Cytoscape, Illustrator, Photoshop, basic video editing
	Systems	<p>Experience in working with Oracle Databases and related design tools</p> <p>Experience in extracting data from CBioPortal and Uniprot</p> <p>Experience in working with key-based databases, such as MongoDB and Apache</p> <p>Experience with system administration and infrastructure maintenance (data storage, transfer, networking, and dependency installations)</p> <p>Experience with AlphaFold database to extract protein structure predictions</p> <p>Knowledge of HIPAA and best safety/data practices</p> <p>Previously cleared for a Top Secret/Secret Compartmented Information clearance at the NSA</p>