Jay Khurana, MD

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EDUCATION

Warren Alpert Medical School of Brown University, Providence, RI **Aug. 2021 – May 2025**
Doctor of Medicine
Selected Coursework: NEMIC Med Tech Leadership Program, Subinternship in Neurology, Neurovascular Surgery, Nuclear Medicine, Neurology Advanced Elective, Neuropathology, Neuroradiology, Emergency Psychiatry, Subinternship in Medicine (Heme-Onc), Lifestyle Medicine, Wilderness Medicine, Advanced Medical Spanish

Brown University, Providence, RI **Graduated May 2019**
Sc.B Computational Biology with Honors
Selected Coursework: *Advanced Algorithms in Computational Biology, Deep Learning, Computational Linguistics, Data Science, Statistical Methods in Bioinformatics, Bayesian Statistics, Intro to Algorithms and Data Structures, Computational Linear Algebra, Introduction to Computer Systems, Statistical Inference in Genomics, Statistical Inference 1 & 2, Genetics*

PROFESSIONAL AND RESEARCH EXPERIENCE

Yale New Haven Health, New Haven, CT **June 2026-June 2029**
Resident Physician (Neurology)

Brown University Health, Providence, RI **June 2025-June 2026**
Resident Physician (Medicine, Preliminary)

Dendro, Providence, RI **Mar 2024-Present**
Project Lead/PI
• Developed algorithmic pipeline that uses large language models to generate AI-created study content (flash cards, test questions, detailed notes) from any medical context (i.e. lectures, grand rounds, surgeries)
• Initiated two IRB-approved studies for assessing the impact of Dendro pipeline in preclinical (Brown Medical School pre-clerkship lectures) and clinical setting (Neurology Grand Rounds)
• Work was funded by a paid pilot with the Warren Alpert Medical School Office of Medical Education
• Selected as finalist in Brown's Venture Prize competition, won 2nd place at Rhode Island Business Pitch Competition

Echowear Inc., Providence, RI **Aug 2022-July 2023**
Data Science Fellow
• Worked with EchoWear team on analyzing data from ongoing Parkinson's wearable device studies and participated in calls with Neurologists to help guide design of user interfaces

Asimov Inc., Simulator Team, Boston, MA **May 2022-Aug 2022**
Machine Learning Software Intern
• Designed and implemented an initial version of a broad-purpose programmable task execution platform at Asimov
• Used platform to perform sensitivity analysis to optimize variables in Asimov's manufacturing of biologics for pharmaceutical clients

PathAI Inc., Machine Learning Platform Team, Boston, MA **Aug 2019-Aug 2021**
Machine Learning Software Engineer II
• Redesigned ML platform for high-performance plug-and-play architecture with 98% faster pod/image load of custom k8s installation
• Integrated cancer detection algorithm and s3-slide uploader into clinical trial services platform as a founding member of the team
• Led 2021 Co-Op interviewing and recruitment cycle and individually mentored co-ops on the machine learning team

CrossCheck News Inc., Providence, RI **Feb. 2016 – May 2019**
Chief Executive Officer and Co-Founder
• Designed an unsupervised online machine learning algorithm to predict the veracity of news and provide related articles
• Raised approximately $50,000 at a $3 million valuation from angel investors in Providence and New York Area
• Implemented SQL Server & VM Django backend hosted on Azure updated with latest news articles scraped by webhose.io
• My responsibilities include minimizing API cost calls, recruiting venture capital, effective marketing, and developing long-term revenue models.

Rhode Island Hospital, Department of Pathology, Providence, RI **Jan. 2016 – May 2019**

Computational Oncology Intern, Principal Investigator: Dr. Alexander Brodsky
• Developed statistical modeling in R to find a minimal subset of miRNAs and mutations predictive of breast cancer
• Performed bioinformatics analyses in R to determine immunotherapy susceptibility of tumors with highly mutated epigenomes

NIH, Laboratory of Malaria Immunology and Vaccinology (NIAID), Bethesda, MD **June 2014 – Aug 2016**
Summer Bioinformatics Research Fellow, Laboratory Chief/Direct Supervisor: Dr. Patrick Duffy
• Developed a Java-based short-read chromatogram and Illumina-short read sequence assembler for single genes in *P. Falciparum*
validated on the placental malaria gene VAR2CSA
• Introduced novel algorithms to account for missing coverage in highly variant domains
• Built user-friendly software for in-house use at the Laboratory of Malaria Immunology and Vaccinology for securely retrieving, accessing, searching, and filtering clinical data from numerous ongoing studies

HONORS AND AWARDS

Dendro Awards: Awards related to the implementation of AI-generated medical study content via Dendro
RI Business Plan Elevator Pitch Competition, 2nd Place, 2025
Brown Venture Prize Finalist, 2025
Startup World Cup Rhode Island Finalist, 2025

New York State Neurological Society Essay Competition (2025) – Selected as winner of NYSNS essay competition as award for travel to residency programs

Harvard EasyA Hackathon Finalist (2023): Selected as top 10 finalist in field of hundreds of competitors for HealthChain, a blockchain-based solution for patient-centric sharing medical records with researchers and key stakeholders

NEMIC Pitch Competition (2022)**:** At the conclusion of the New England Medical Innovation Center Med Tech Leadership Program, my team received 2nd place in a pitch competition that included several Brown University faculty and local industry leaders. Our pitch was for SubSound, a hypothetical device and company that aims to detect breast masses better using a proposed new ultrasound approach.

CrossCheck Awards: awards related to creation of the CrossCheck news verification algorithm and company
RI Business Plan Competition Semifinalists, 2018
Redbull Launchpad National Finalist, 2017
Brown-Lab Accelerator Selection, 2017
Explore and Expand Brown Nelson Center for Entrepreneurship Grants, 2017
Brown University Computer Science Department People's Choice Research Symposium Award, 2017

Brown University Undergraduate Teaching and Research Award (2018)

GESPA Awards: Awards for the creation of GESPA, a software for predicting pathogenicity of coding single nucleotide mutations
Intel Science Talent Search Semifinalist, 2015
Siemens Math, Science and Technology Semifinalist, 2014

TECHNICAL SKILLS

Programming Languages: Python, Java, R, SQL, JavaScript/TypeScript, C, HTML/CSS, x86-64 assembly
Software and Modeling Frameworks: Tensorflow, Scikit-Learn, numpy/pandas, Kubernetes/EKS, django/drf, Docker, MongoDB, AWS/Azure, BASH/Unix, GIT, Statistical Modeling, Algorithmic Design, OOP, JMP/PRISM, Excel Models, DNA and RNA Sequencing Pipelines, GWAS, node.js & vue.js
Certifications: AHA Basic Life Support (June 2025), AHA Advanced Cardiac Life Support (June 2025)
Spoken Languages: Spanish (Professional Working); Hindi (conversational)

PUBLICATIONS AND PATENTS

Khurana JK, Zaki HA, Pavlick E, et al. "From lectures to learning outcomes: meaningful integration of AI-generated content in pre-clerkship medical training." *BMC Medical Education*, 2026. doi:10.1186/s12909-026-09975-1.

Guo W, **Khurana JK, et al.** "Rapidly progressive sensorineural hearing loss due to sporadic Creutzfeldt-Jakob disease." *BMJ Case Reports,* 19(1):e268638 (2026).

Brodsky AS**, Khurana JK** et al. "Somatic Mutations in Collagens are Associated with a Distinct Tumor Environment and Overall Survival in Gastric Cancer." BMC Cancer, 4;22(1):139 (2021).

Khurana JK, Reeder JE, Shrimpton AE, Thakar J. "GESPA: classifying nsSNPs to predict disease association." BMC Bioinformatics, 16; 228 (2015).

Jay K Khurana. Novel PET-CT Approaches for Characterization and Treatment of Neoplasms of the CNS. USPTO No 63539279 (Pending).

Jay K Khurana & Christopher S Chen. Real-Time Algorithmic Pipeline for Rapid and Accurate News Classification via Unsupervised Clustering and Machine Learning Classifiers Trained on Discretized Spaces. USPTO No 63075917 (Pending).

RESEARCH PRESENTATIONS, INVITED TALKS, AND MEDIA

Jay Khurana. "Using AI to study: Medical students should know the do's and don'ts." Media Feature (interviewed as lead author of BMC Medical Education study), American Medical Association, ama-assn.org, September 2026.

Jay Khurana, Hossam Zaki, Syed Rizvi, Saima Chaudhry. "Large Language Model Pipeline Optimized for Neurology Education Demonstrates Improved Trainee Learning Outcomes in Randomized Intervention." Oral Presentation (Abstract 1858), American Academy of Neurology Annual Meeting, Chicago, IL, April 2026.

Jay Khurana. "AI in Medicine: What Physicians Need to Know." Invited Lecture to Brown Medicine Faculty and Residents, Providence, RI, March 2026.

Jay Khurana, Alexander Brodsky. "Pan-Cancer Analysis of Collagen Variants Shows Significant Associations with Patient Outcomes." Brown University Summer Research Symposium, Providence, RI, August 2018

Jay Khurana, Christopher Chen, Harrison Xu, Nathaniel Brennan. "CrossCheck: An Online Bayesian Machine Learning Approach to Rapid Content Verification." Brown University Computer Science Research Symposium, Providence, RI, May 2017.

Jay Khurana, Robert Morrison, Patrick Duffy. "Using the Placental Malaria Variant Antigen Gene VAR2CSA as a Model for Assembling Polyclonal Sequences." National Institutes of Health Summer Poster Day, Bethesda, MD, August 2016.

Jay Khurana, Robert Morrison, Patrick Duffy. "Field sequences of *Plasmodium falciparum* variant surface antigen VAR2CSA: relation to transcription and clinical outcomes in African children." National Institutes of Health Summer Poster Day, Bethesda, MD, August 2015.

Jay Khurana, Robert Morrison, Jason Wendler, Patrick Duffy. "A Computational Approach for Genetically Differentiating between Mild and Severe Malaria Caused by *Plasmodium falciparum* in Mali Children." National Institutes of Health Summer Poster Day, Bethesda, MD, August 2014.

SELECTED ACTIVITIES AND PROJECTS

Brown Alumni Entrepreneurship Group, Globally **Nov. 2020 – Present**
Co-President and Founding Board Member
I help run the Brown Alumni Entrepreneurship Group, a volunteer-run 501(c)(3) non-profit whose mission is to inspire, connect, and support Brown Alumni Entrepreneurs nationwide. As co-president, I have helped the group run events attended by thousands of Brown Alumni across the board with speakers including a former president of the World Bank and founders of several startups valued at over one billion dollars. I helped start our mentorship program, BEAM, which connects aspiring and early-stage Brown Alumni founders to mentors who are seasoned industry experts. I also led the effort to recruit group members, building a board of directors and advisors from Brown Alumni entrepreneurs.

Warren Alpert Medical School Artificial Intelligence Interest Group, Providence, RI **March. 2022 – Present**
Co-Leader
I help run the medical students' newly founded AI Interest Group. We have helped host events attended by hundreds of members of the Brown Community. Events have included an endowed lectureship supported by the Dean of Medicine and Biological Sciences and appearances from multiple successful medical AI founders and academic experts. Under my leadership, we connected with many of Brown's faculty creating a catalog for students to be connected to research opportunities at the intersection of AI and medicine. I worked closely with course leaders for electives to create curriculums exposing students to medical AI advances.

Generative AI Work in Medical Curriculum, Providence, RI **Mar. 2024 – Present**
Independent Study
I proposed a project that would use generative AI to help transform medical context (ex. informal teaching sessions, didactics, and surgeries) to structured learning material such as summaries and flashcards. I'm working with the leadership at Brown's Medical School as well as the Brown University Health Hospital System and Brown Neurology to conduct multiple randomized control trials to gauge the effectiveness of these proposed interventions on trainee

learning.

Hackathon Team Projects, Providence, RI and Cambridge, MA **March. 2016 – Present**
HealthChain (Harvard EasyA Hackathon 2023): blockchain solution to allow patients to have healthcare records shared transparently
MojiChat (HackMIT 2016): Photomessaging application that captured and shared facial reactions to content as emojis
CancerMine (Hack@Brown 2016): Batch TCGA Cancer Data downloading software

Brown University, Providence, RI **Sept. 2018 – Dec. 2018**
Undergraduate Teaching Assistant, Department of Computer Science
CSCI 1420/2420, Deep Learning. | Ran section of the laboratory portion of the course weekly, ran weekly office hours, graded assignments, and selected to lead a review of the course material before the final.