Kyle M Shannon

Curriculum Vitae — November 2025

kshannon@ucsd.edu
www.kmshannon.com

Academic Positions	**University of California San Diego** University Lecturer, Halicioğlu Data Science Institute & Cognitive Science Department	2019 – Present
Selected Professional Positions	**Volunteer Transportation Center, Inc.** Director of Data Science	2019 – Present
	Gerson Lehrman Group Data Science Consultant, SME	2018 – Present
	HealthGen.AI Strategic Advisor, Data Science & ML	2017 – 2019
	TurnKey Trips, LLC Co-Founder and Data Science Lead ⭐ Acquired by Volunteer Transportation Center	2015 – 2019
	Booz Allen Hamilton Staff Data Scientist	2013 – 2015
	Backyard Brains Inc Scientist and Educator	2011 – 2013
Research Interests	**Methods:** Computational Modeling, Medical Imaging, Machine Learning, Data Science **Focus:** Memory Circuits, Neural Population Dynamics, Neurodegenerative Disease **Applications:** Healthcare Systems, Health Equity, Translational Neuroscience, Education	
Education	**University of California San Diego** M.A.S. in Data Science and Engineering *Thesis:* Lung Nodule Classification & Localization *Advisors:* Dr. Bradley Voytek, Dr. Mehrdad Yazdani	2016 – 2018
	University of California San Diego B.S. in Cognitive Science with Specialization in Neuroscience President, Cognitive Science Student Association (2012) Vice President, Cognitive Science Student Association (2011)	2010 – 2012
	San Diego Mesa Community College Transferred to UC San Diego	2008 – 2010
Teaching	**University of California San Diego** **Courses as Instructor of Record**	2019 – Present

⭐ 24 classes – 2,800+ students – 96% average rating

DSC 100 – Introduction to Data Management (5 offerings)
DSC 40a – Theoretical Foundations of Data Science (5 offerings)
COGS 9 – Introduction to Data Science (11 offerings)
COGS 8 – Hands-on Computing (3 offerings)

Senior Capstone Supervision
DSC 180a/b – Sepsis - Using Clinical Healthcare Data Science to Identify and Combat an Infectious Killer (3 cohorts, 2023-2026)
⭐ First two cohorts awarded Best Capstone

Course Development
COGS 8: Introduction to Hands-on Computing
Designed from ground up: Python, robotics, embodied cognition

DSC 100: Database Management
Adapted to interactive format with live coding focus

[DSC 40a: Theoretical Foundations of Data Science](#)
Implemented flipped classroom with real-world ML projects

Teaching Assistant

COGS 184 – Modelling the Evolution of Cognition	Spring 2012
COGS 184 – Modelling the Evolution of Cognition	Winter 2012
COGS 143 – Animal Cognition	Fall 2011

All courses for Professor: Dr. Christine Johnson

STEM Workshops Organized

Data Science Project Design – UCSD	2025
Python for Data Science – Booz Allen Hamilton	2015
Hands-on Electrophysiology & Neuroscience – SD Maker Faire	2015
Electrophysiology with a SpikerBox – Columbia University, NY	2013
Hands-on Electrophysiology & Neuroscience – Chile	2012
(*Universidad de Valparaíso, High Schools in Valparaíso and Santiago*)	
Nerve Conduction Velocity with the Earthworm – Summer Camps	2012
(*San Francisco, CA*)	

Publications

Peer Reviewed

[Portable conduction velocity experiments using earthworms for the college and high school neuroscience teaching laboratory](#)
Shannon, K. M., Gage, G. J., Jankovic, A., Wilson, W. J., & Marzullo, T. C.
Advances in Physiology Education – *38(1), 62-70, 2014.*

Conference Papers & Posters

Portable conduction velocity experiments using earthworms for the college and high school neuroscience teaching laboratory
Shannon, K. M., Gage, G. J., & Marzullo, T. C.
SfN – *Program No. 23.16SA/MMM25. 2013 Neuroscience Meeting Planner. San Diego, CA, 2013.*

Web Publications

[Up and Running with Ubuntu, Nvidia, Cuda, CuDNN, TensorFlow, and PyTorch](#)
HackerNoon, 2018.

[Guide to Reading Academic Research Papers](#)
Towards Data Science, 2018.

Guide to Reading Academic Research Papers (Reprinted)
AI and Deep Learning Weekly – Issue 68, 2018.

[Up and Running with AWS EC2, S3, Linux and Deep Learning](#)
Medium.com, 2018.

Invited Talks

Final Lecture Series: Building a Career, Not Just Getting a Job — 2025
UCSD Halicioğlu Data Science Institute

State of GTFS Data in US Rural NEMT — 2024
International Mobility Data Summit, Montréal Canada

Building Data Products – Case Study in Rural Public Transit — 2023
UCSD Department of Cognitive Science, COGS 108

Software to Facilitate Independence for Individuals with Cognitive Impairments — 2022
CTAA Community Transportation Association of America Conference

Data Science & Ethnography — 2021
UCSD Department of Cognitive Science, COGS 13

Lung Nodule Detection in CT Scans using 3D CNNs — 2020
CHOC Children's Hospital of Orange County

Data Science & Ethnography — 2020
UCSD Department of Cognitive Science, COGS 13

Approaching Data Science Interviews — 2018

Thinkful

Lung Nodule Detection in CT Scans using 3D Convolutional Neural Networks	2018
Thinkful	
Learning Data Science & Finding a Job	2018
Thinkful	
The Science of Data Science	2018
Allegiant University	
Data Science out of the Classroom!	2018
Udacity	
Data Science for Healthcare Logistics	2018
UCSD Halicioğlu Data Science Institute Summer Camp	
Modeling Hospital Supply P/Os	2015
Booz Allen Hamilton	
Data Visualization with Python	2015
Booz Allen Hamilton & SPAWAR	
Using Cognitive Science after UCSD	2014
UCSD Department of Cognitive Science	
What can you do with a degree in Cognitive Science?	2013 – 2014
Several San Diego High Schools	

Publicity & Interviews	[Live Interview on Data Science, AI, and Transit – Opportunities and Issues](#) *N-CATT National Center for Applied Transit Technology*, 2023.
	[VaxSpotter Project (web app for finding COVID vaccine appointments)](#) ⭐ ABC Channel 10 News, 2021.
	[VaxSpotter Project](#) ⭐ KPBS Interview, 2021.
	TurnKey Trips software featured during client interview *WWNY-TV Channel 7*, 2018.

Community STEM Events	Industry vs. Academia Panel	2025
	UCSD Halicioğlu Data Science Institute	
	Careers in Data Science Panel	2025
	UCSD Halicioğlu Data Science Institute	
	Fireside Coffee Chat	2024
	UCSD Halicioğlu Data Science Institute	
	Project Judge	2024
	DataHackathon at UCSD	
	Data Science & ML Industry Panel	2021
	UCSD CSSA	

Grant Writing Experience	CDIIP – UCSD Course Development and Instructional Improvement Program [*$24,000 - Not Awarded*] *UCSD, content contributor/SME*	2023
	NYSERDA – The New York State Energy Research and Development Authority [*$250,000 - Not Awarded*] *TurnKey Trips, primary submitter*	2016
	NIH SBIR Phase 2, Project - 2R44MH093334-03 Backyard Brains: Bringing Neurophysiology Into Secondary Schools ⭐ [$599,521 - Awarded] Backyard Brains, content contributor/SME	2012
	NIH SBIR Phase 1, Project - 1R43MH093334-01 Backyard Brains: Bringing Neurophysiology Into Secondary Schools ⭐ [$250,000 - Awarded] Backyard Brains, content contributor/SME	2011

CURRENT MENTORSHIPS	**DSC 180AB SENIOR CAPSTONE GROUPS**	2025 – 2026

Sepsis - Using Clinical Healthcare Data Science to Identify and Combat an Infectious Killer

GROUP 3 (2025-26): VARUN PABREJA, GLORIA YA, YASH PATEL, ETHAN VO, JASON XU, KATE ZHOU, SAMUEL MHJOURI, UTKARSH LOHIA

VIGNESH PALANIAPPAN, UCSD DATA SCIENCE M.S.	2024 – PRESENT

Driver recruitment analytics project for rural transit

BOBBY ZHU, UCSD B.S DATA SCIENCE → UCSD M.S. CSE	2023 – PRESENT

Data science and software engineering mentorship; VTC intern 2025-26

OWEN MILLER, UCSD B.S. DATA SCIENCE MATH	2023 – PRESENT

Teaching development through course curriculum design and TA experience

JIESEN ZHANG, UCSD B.S. DATA SCIENCE → UCSD M.S. CSE	2021 – PRESENT

Industry-standard data science practices

ANSH BHATNAGAR, UCSD UNDERGRADUATE	2023 – 2025

Leadership development as President of DS3 (UCSD Data Science Student Organization)

ANUJ PATIL, CLARKSON UNIVERSITY M.S. → VTC DS FULLTIME-EMPLOYEE	2023 – 2024

Geospatial data science training

AREEB SYED, UCSD M.S. CSE → VTC SWE FULLTIME-EMPLOYEE	2023 – PRESENT

Geospatial data science and software engineering

FORMER MENTEES	**SUMMER 2025 VTC RESEARCH INTERNSHIP**	2025

Algorithmic Scheduling for Rural Transit

AHMED MOSTAFA, OWEN MILLER, JIESEN ZHANG, BOBBY ZHU in literature review, mathematical modeling, and software engineering

SUMMER 2024 VTC ENGINEERING INTERNSHIP	2024

Mobility Management Dashboard and Training Interfaces
VINEETH CHELUR in software engineering and monolithic architecture

DSC 180AB SENIOR CAPSTONE GROUPS	2023 – 2025

Sepsis - Using Clinical Healthcare Data Science to Identify and Combat an Infectious Killer

GROUP 1 (2023-24): COLIN TRAN, ZHUJI ZHANG, DIEGO ZAVALZA, ASIF MAHDIN, JIYEON SONG, OAKKAR AUNG, RIHANA MOHAMED, VIBHA SASTRY
GROUP 2 (2024-25): BOBBY ZHU, AHMED MOSTAFA, RAINE HOANG, ROHAN DUVUR, TONGXUN HU, OJAS VASHISHTHA

HDSI UPPER DIVISION GROUP PROJECT	2023

WW2 Image Reconstruction and Repair using CNNs and Computer Vision
STUDENTS: JIESEN ZHANG, VICKY LI, JESSICA ZHANG, TONGXUN "SHERRY" HU, HARSHITA SAHA

VINEETH CHELUR, UCSD CSE M.S → SWE MICROSOFT	2023

Teaching skills development in data science

AKSHAY NAGARAJAN, UCSD COGSCI PH.D. CANDIDATE	2022

Data science applications in education research

KUNAL RUSTAGI, UCSD CSE M.S.	2022

Applying electrical engineering to data science and teaching

BOYONG LIU, UCSD UNDERGRADUATE	2022

Personal data science projects

ZHILIN KONG, UCSD UNDERGRADUATE	2021

Teaching development and data science job applications

PIAO LING, UCSD UNDERGRADUATE	2021

Industry-standard exploratory data analysis

ASHWIN MISHRA, UCSD CSE M.S. → SENIOR AI ENGINEER AT SERVICENOW	2020

Software engineering to data science transition

SESHU MALINA, UCSD UNDERGRADUATE → HARDVARD MEDICAL SCHOOL	2020

Healthcare data science

Joshua Kaasik, Ph.D. Candidate → Data Scientist at HP   2019
Academia to industry transition

Michelle Li → Machine Learning Engineer at Warner Bros.   2018
CS to data science career transition

Anu Liyanagamage → Data Analyst at CUNY   2018
Undergraduate to data analyst role

Erin Shockley, Ph.D. → Data Scientist at Ascension   2018
Biomedical research to senior data science

Skills

PROGRAMMING LANGUAGES & TOOLS

LANGUAGES: Python, SQL, Ruby, JavaScript, R, C++, Bash, MATLAB
SCIENTIFIC: Python data stack (e.g. NumPy, Pandas), Git/GitHub, LaTeX, HPC envs
DATABASES: PostgreSQL, Sqlite, Neo4j (Cypher), GraphDB (Gremlin), SPARQL, MongoDB
VISUALIZATION: Matplotlib, Seaborn, Plotly, D3.js, Uber's H3

DATA SCIENCE & MACHINE LEARNING

FRAMEWORKS: PyTorch, TensorFlow/Keras, MLflow, LangChain, Intel OpenFL
METHODS: CNNs, GLMs, Bayesian inference, Supervised/unsupervised learning
APPLICATIONS: Medical EHR/image Analytics, PCA, Route Optimization
ANALYSIS: EDA, Feature enrichment, Geospatial analysis, Medical EHR/image Analytics

SYSTEMS ENGINEERING & INFRASTRUCTURE

ARCHITECTURE: API design, Microservices/Monolithic, Full-stack development, Rails
CLOUD: AWS, Google Cloud Platform, Heroku, Netlify, GitHub Actions
PIPELINE: Apache Airflow, Dagster, ETL/ELT design, Docker
SCALE: Apache Spark, Distributed computing, Data governance, Dataset/model versioning

DOMAIN EXPERTISE

MEDICAL TRANSPORTATION: Routing, Computational Modeling, NEMT
HEALTHCARE: Medical imaging, EHR analysis, HIPAA compliance, ML Ops
EDUCATION: Curriculum design, Large-scale course management, Pedagogical innovation, Neuroscience education