

Brian Hogan, M.S.

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<[in](#)><[github](#)><[portfolio](#)>

CERTIFICATIONS AND EDUCATION

A. [StanfordOnline](#): Statistical Learning Certificate Fall 2023 - Ongoing
[An Introduction to Statistical Learning](#) by James, Witten, Hastie, and Tibshirani, (2021).

B. Generative AI Training [Short Courses](#), by DeepLearning.AI & Open.AI Spring 2023 - Ongoing

- Pair Programming with a Large Language Model, ChatGPT Prompt Engineering Developers.
- Building Systems with the ChatGPT API, LangChain for LLM, and Finetuning LLMs.

Syracuse University, Syracuse, NY Sept 2018 - Dec 2020
M.S. Applied Data Science, 3.8/4.0

Boston College, Chestnut Hill, MA Sept 2000 - May 2001
M.S. Sociology/Statistics. Matriculated, completed 5 courses before perm. work relocation.

Harvard University, Cambridge, MA Sept 1997 - June 1999
C.S.S. Bus. Admin, Harvard Extension School, On-ground, semesterly attendance requirement.

Babson College, Wellesley, MA Sept 1989 - May 1993
B.S. Business Administration and Psychology Departmental Degree at Wellesley College.

INSTRUCTOR EXPERIENCE

Instructor	School of Professional Studies, Computer Science, graduate Clark University, Worcester, MA	
	MSCS-3050 <i>Software Life Cycle, on-ground</i>	Fall 2023
	<ul style="list-style-type: none">• Design concepts, paradigms, quality, testing, configurations.	
	MSCS-3070 <i>Survey of Systems and Programming Language</i>	ibid.
	<ul style="list-style-type: none">• Bits, von Neumann, LC-3, Assembly, data structures, IO, C, C++.	
Instructor	Department of Computer Science, undergraduate, in-person Southern New Hampshire University, Manchester, NH	Feb 2022 -
	IT-304 <i>Systems Design and Analysis</i>	Fall 2022, Fall 2023
	<ul style="list-style-type: none">• Instruct ontology information science and 10 system design methods• Emphasize practical design and utility using Python data objects.	
	IT-226 <i>Communication in STEM Professions</i>	Spring 2023
	<ul style="list-style-type: none">• Foster specific and precise communication skills for effective interpersonal interactions within STEM professions.• Train with an interactive corpora and NLP code for information extraction, template generation, and GPT AI augmentation.	
Instructor	Department of Computer Science Benjamin Franklin Cummings Institute of Technology, Boston, MA, 02116	
	CT-144 <i>Intermediate C++</i>	Summer I 2023
	<ul style="list-style-type: none">• Summer tutor contract for C++ programming instruction.	
Teacher	ICARUS AI E-Learning, 100 Wilshire Blvd, Santa Monica, CA 7.pillars.of.python - built a specialized data transformation how.To	Fall 2022

Tutor	<i>Data Science and Programming</i> , https://tutormatchingservice.com 2019 - 2020 <ul style="list-style-type: none"> • Tutored data science in R and Python.
Corporate Trainer	Industrial Simulation Engineering with Discrete-event 2004 - 2016 ProModel Corporation, Orem, UT Performed 5-7 per year on-ground custom solution simulation training, instructional design, and technical curriculum development for <ul style="list-style-type: none"> • Lockheed Martin, San Antonio, TX. F-22 and F-35 engine overhaul. • NASA, Kennedy Space Center, FL. Optimizing paper-to-image system. • NASA, Washington, DC. Space asset portfolio resource requirements, cost and personnel, data ETL, and scenario of sliding time scales. • West Point, NY. War-based resources and logistics.
Riding Instructor	<i>Equestrian field sports</i> , Gone Away Farm, Voluntown, CT 2002 - 2012 <ul style="list-style-type: none"> • Taught horsemanship and performance care for adult and junior riders.

CURRICULUM AND CONTENT CREATION

Creative Writer	Noodle , New York, NY, 10011, Elissa Lappendga , contract Mar - Aug 2023 <i>graduate course: COSC-526, Introduction to Data Mining @ www.utk.edu</i> <ul style="list-style-type: none"> • Drafted a 10-module course in data mining with advanced algorithms and practitioner skilling for operating Apache Spark, recommender systems, and MLflow scaling in a Colab environment.
Content Writer	Google Inc , Learning Lab, NY, NY (via synergis) 03/22 - 11/22 <i>Coursera course: Google 2023 Advanced Data Analytics Certificate</i> <ul style="list-style-type: none"> • Lead writer for course 2 of 7, Get Started with Python. • Produced 21 instructional readings and 10 codebooks with >3000 lines. • Wrote two capstones w OLS, LR, MLR, logistic, chiSq, supervised, SVM. • Reviewed and edited scripts for construct correctness and continuity. • Trained in 18 E-Learning multimedia assets like prompts and quizzes. • Passed coding entrance exam and admitted to foo.bar.withgoogle.com
Instructional Design , Southern New Hampshire University, Manchester, NH 02/22 -	<p>A. <i>course: IT-304 Systems Design and Analysis, contracted</i></p> <ul style="list-style-type: none"> • Performed for Python code, media, and lecture instructional design • Updated reengineering methodologies and interactive learning bytes <p>B. <i>course: IT-226 Communication in STEM Professions, uncontracted</i></p> <p>Update course with advanced persuasion writing skill methods and</p> <ul style="list-style-type: none"> • Instill polysyllabic learning for authentic voice principals. • Provide writing assistance learning technology, like entropy.
Curriculum Design	ProModel Corporation, Consulting , Orem, UT 2004 - 2014 Performed instructional design and technical curriculum development for <ul style="list-style-type: none"> • Lockheed Martin, San Antonio, TX. Wrote a customized simulation course for scheduling engine overhaul for F-22 and F-35 Lightning. • NASA, Kennedy Space Center, Titusville, FL. Designed and delivered discrete-event curriculum for optimizing a paper-to-image system. • NASA, Washington, DC. Developed curriculum for simulating space asset portfolio resource requirements with complex algorithms and ETL. • West Point, NY. Developed curriculum for war-based logistics.

Content Writer EXPO High School Summer Programs, Norwood, MA 04/21 – 06/21

- [Wrote](#) AI/ML curriculum for instructor training at 10,821 words.

PROFESSIONAL EXPERIENCE

Technical Writer and Illustrator II, Alert Innovation, Billerica, MA 11/21 – 03/22
Department: Learning, Training, and Development
 Drafted complex robotic media for repair, service, and training.

- 12 [maintenance manuals](#), 11 service procedures, and 2 [user manuals](#)

Scientific Editor *Data science peer-reviewed publications* 07/20 – 06/21
 Accdon, LLC (Publishing Services), Waltham, MA

- Trained with scientific style guide and edited 3 journal manuscripts.

Industrial Engineering Simulation Management Consultant, ProModel Corp, Orem, UT 2004 – 2016
 Performed 30+ [reengineering](#) and application implementations in pharma, manufacturing, and defense with *security clearance*, including

- Leadership of clients and software development staff.
- Strategic assessments, design, specifications, and implementation.
- [Demand](#)/constraint, resource/budget forecast, and program management.
- Coded with C++ and system [design](#) tools like ERD, EER, [DFD](#), and [IDEF0](#).
- Simulation curriculum creation and delivery for NASA and WestPoint.

		Process Improvement	Process re-design	Process Re-engineering						
Complexity Low -----> High	---->	GeMM Colony Sustainability + Husbandry → create complex work algor. to forecast headcounts	Weekly Machining Spindle Cut Plan - Sig Sauer → Oracle says repriorization of BOMs to cut plan	Security Transactions Paper to Image Processing	20	50	75			
		Defined Benefits & Contributions → Modify data processing in payment systems	Investment Mgr Task Harmonization → PIMCO consolidate cash payment system	Inv. Mgr Trade Image Capture → Automate MultiCurrency buy/sell instructions	20	50		250		
		Medical Affairs Resource Planning global → create complex work algor. to forecast headcounts	Animal Care and Use Protocol Harmonization → 5 global sites, IT architecture harmonization			65	100			
		Regulatory Affairs Resource Planning → algorithm generator annualized headcount	Drug Discovery Project Portfolio Forecast App → 5 global sites, 2-4 FTE/site, continuous data anal.			90			300	
		Clinical Requirements Drug Portfolio → resource algorithms + demand simulator	Nonhuman Primate Supply Chain Manager → deep research to reduce research subjects	BioBank Facility RFP - Production Parameters → develop tray loading alg from historical orders	40	50	100+			
		Canine Colony Asset Reduction → deep research to reduce research subjects	REMP 4 quad cold storage 40k plates installation → develop tray loading alg from historical orders		20		10			
		Compound Enrich Plate Production → design weekly manufacturing schedule	Packaging of Low-invasion Surgical Instruments → 37 machine teams, cobalt reactor, throughput		20		50			
		Tissue Bank Global Consolidation → space requirements for sample consolidation	Engine Repair Optimization - Lockheed Martin → 5 lines x 10 engines x demand constraint		20		25			
		Order Fulfillment Materials Mgmt → dry ASRS → augment order pick for faster fulfillment	Product Line Extension Portfolio Modeling statistical scenarios of go/nogo PLE decisions		20		10			
		IT Application Sunset → 495 apps, archive 292, ~300 FTE hrs						100		
		Tactical ----->		Strategic	20	40	50	100	200	300+
		Banking	Data Science Analysis	Data Science App	Strategic Consulting	Consulting	FTE Impact			

SKILLS

Proficient	Advanced	Familiar	IDEs
Python , R	C++ , Java, SQL, VBA	Linux, SMSS	Spyder, Visual Studio

- Representational State Transfer (REST) [APIs](#) like Facebook, REDCap, and Twitter.
- Libraries: caret, e1071, ggplot2, klar, pandas, sci-kit-learn, and Tensorflow2.
- NLP – levels of language, lexical semantics, POS, negation, grammatical mood.
- Multimedia: Help/Manual, Illustrator, LaTeX, Markdown and some Sphinx and Photoshop.
- [Research](#): [fact sheets](#), X9 bibliographic database, literature review and summary.
- [Technical writing](#) that ranges from circuitry and robotics to SaaS, along with the distillation of complex scientific processes into clear language like
 - [GEMM mouse breeding protocols](#)

INSTRUCTIONAL READINESS

Generative AI, Machine Learning, Programming, and Systems

- AI Prompt engineering, text synthesis, and fact sheet construction.
- Systems analysis design, re-engineering, and theoretical paradigms.
- Text and image mining with algorithm theory and pypi.org libraries.
- Scripting for the data science pipeline with APIs, regex, mongoDB.
- Introduction to advanced NLP like lexical semantics, POS, negation.
- Introduction to databases

Statistics

- A. **Bayesian** - suitable to instruct with existing university materials.
- a. Classwork: Stanton, J. (2017). [Reasoning with Data with R](#)
 - b. Personal: Marin, J-M et al. (2014). [Bayesian Essentials with R](#)
 - Inference, ANOVA, association, mR, categorical, series.
- B. **Frequentist** - statistical theory, classification, convolutional neural networks, decision tree, linear regression, logistical regression, multiple linear regression, PCA, SVM, and unsupervised.
- a. James, G., Witten, D., Hastie, T., Tibshirani, R. (2021). *An introduction to statistical Learning*. [Springer](#).

ADVISING & CASE WORK

Computer Literacy Assistant for Patients with Schizophrenia

09/2023 -

- Assist Lauren, a young adult with schizophrenia, in pursuing her desire to code and work for the Navy or NASA. Lauren is a brilliant person with a recorded IQ of 137. Family circumstances contributed to scholastic neglect, but she's already proven deep skills as a competent HTML programmer at ten.
- At age 22, focus on upskilling digital literacy toward employment.

<u>Name</u>	<u>Place</u>	<u>Department</u>	<u>Position</u>	<u>Focus</u>	<u>Date</u>
• Andrew	SNHU	Comp. Sci.	Junior	ADHD skill development	06/23 - 08/23
• Pietrol	SNHU	Comp. Sci.	Sophomore	ADHD study coaching	02/23 - 03/23
• Selenaw	W.Hospital	Inpatient	Nurse.Asst	TEAS exam tutoring	10/22 - 11/22

Career Advisor

FIRSTHAND Advisors, <https://harvardocs.firsthand.co/>
Office of Career Services, Harvard University

2021 - 2023

- Service work of 2-4 annual reviews of student CV and portfolio.

Graduate Advisor

Nursing, programming fundamentals, and research topics
Self-employed, Greater Boston Area

2017 - 2018

- Advised nursing students in logic and methods in topic research, survey design, and statistics. Writing abstracts, fact sheets, and healthcare policy assessments.

UNIVERSITY SERVICE

Donor

Southern New Hampshire University, Manchester, NH

A. *e-Equipment Donor, e-Trash Recycling, Winchester, MA*

07/22 -

- Municipality partner provides 11 monitor, cables, graphic boards.

Mentor

B. Amazon Web Services Coding Jam Competition

10/22 & 04/23

- 04/23 entered eleven students and JamesT won last year (10/22).
- 10/22 entered 3 students in ~50 student four school competition.

RESEARCH EXPERIENCE

- Research [Volunteer](#) 23-bed, 63-nurse and associate acute care floor 06/21 - 01/22
Winchester Hospital, Winchester, MA
Manager: Debra Barbuto, RN, MSN, debra.j.barbuto@lahey.org
- A. Investigated the efficacy of evidence-based purposeful hourly rounding on patient [falls](#) and length of stay satisfaction, including
 - Designed data collection and encoded 3 months of patient metrics.
 - Performed REDCap API data transfer in R software with CRAN `data.table`
 - Outcomes: [adopted](#) purposeful hourly rounding.
 - B. Assisted in evaluating call bell [signal](#) standardization across units to help distinguish noncritical from critical care requests.
 - Located call bell [parts](#); IT unable to perform system upgrade.

RESEARCH INTERESTS

I. Use of polysyllabics for information authenticity and exchange quality.

Given AI language skilling, upskilling with logodaedaly via polysyllabicisms and periphrastics may combat inauthentic forms of writing. Steer learners toward authenticity and heighten information exchange quality; new positive discourse scoring mechanisms can encourage the personal inventory of one's ongoing substrate pool. Other items include

- List diverse polysyllabic words into syllable trees.
- Transposition of syllable trees [REDACTED] using LDA et al.
- Form [REDACTED] matrix by custom ontological by [REDACTED] complexity index.
- Validate score mechanisms and methods for accuracy and effectiveness.

Current work -

- a) Building objects for [REDACTED] library on pypi.org.
- b) Using [OpenAI](#) and DeepLearn.AI REST APIs with prompting and fact sheets.

II. AI's use polysyllabics to captivate or exploit human conversation.

A new [Lacanian REAL](#) on the horizon is the malicious use of conversational AI to manipulate, captivate, and exploit human information exchange interactions. Like a magician's legerdemain, AI can computationally assess a user's skill and education level and dynamically alter its language using complex jargon and polysyllabics to manipulate or obfuscate outcomes. This work assesses

- A programmatic means and scoring of a human's lexicon level.
- Develop appropriate statistical measures of fairness.

III. Use of long-format podcasting to AI harvest computer science literacy content.

Goal - Create a data pipeline of computer science podcast knowledge bytes.

Why - Higher education must imbue students with active higher principal training and learning. Certain podcast providers, such as Lex Fridman, provide this content.

For example - code.org is advancing the paradigm and influencing the [national policy debate](#) on ensuring computer science requirements for high school graduates.

PROFESSIONAL DEVELOPMENT

- i. **Generative AI Training at DeepLearning.AI and Open.AI** Spring 2023 - Ongoing
 - Practical use case: Testing GPT 3.5 prompting for [course grading](#) and outcome.
- ii. **Google Learning Lab, Multimedia asset design training** Spring 2022
 - Performed E-Learning multimedia training on 18 assets including readings, vignettes, segmentation, cognitive balancing, Flesch Kincaid, and signaling.
- iii. **Amazon Web Services, Account ID: FpfKzlcOwkmK4YPzjMp3JA2** 2020
 - Performed [training](#) on the platform's stack across 14 academy classes, seven live [twitch](#) videos, and books by experts [J. Simon](#), and [C. Fregly, A. Barth](#).
- iv. **Data Science Specialization Certificate, Johns Hopkins via Coursera** 2017
 - <https://www.coursera.org/specializations/jhu-data-science>
- v. **Re-engineering & Statistical Visualization Specialization Training**
 - Edward Tufte: Analyzing and Presenting Data and Information 2000
 - Hammer and Company [Reengineering Process Mastery](#) 1997 - 1999

AWARDS AND HONORS

- A. **foobar participant, Google, Inc** Spring 2022
 - Deep Python and Linux research yielded an [invitation](#) to this elusive challenge.
 - Completed three challenges before timing out.
- B. **[Lex Fridman](#) interview finalist, personal secretary** 10/20 - 01/21
 - Lex redefined tough. Grateful for his personal attention.
- C. **Golden Key International Honour Society, Member** 10/20 -

VOLUNTEER

- A. **First Congregational Church Fix.IT, Winchester, MA, karenbellacosa@me.com** Mar, June, Sept, 2023
 - Perform church bazaar client repairs like lamps, fans, e-gadgets, and
- B. **Wikipedia Language Editor, Account ID: bhogansnhu.edu** 08/2022 - 08/2023
 - Perform periodic article editing and updating with research citations.
- C. **Trash to Treasure, Winchester High School Art Department, MA** 11/20 - 09/21
 - Jackson Lumber and Millwork, Manager Geoff MacKay, Woburn, MA
 - [Gathered](#) cutoffs, paint, and supersize cardboard for chair Jenn Levatino.
- D. **Mechanical Turk, amazonmturk, ID = A3IWDP1WNMWVR8** 2020 - 2021
 - Learned crowdsourcing; 1017 human intelligence tasks; classification; extraction.

REFERENCES

Dr. Kim Bo, Ph.D.

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Southern New Hampshire University
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Jim McCoy

Instructional Designer at Google, Learning Lab
Grow with Google Career Certificates
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I'm deeply grateful to each person for their generosity, kindness, and time writing recommendations.

- [Professor Humayun Kahn](#), MS, MBA [DPS program recommendation](#), [technical writer recommendation](#)
- [Dr. Mitchell Kase](#), MD
- [David Primrose, MS](#), Oracle Cloud Leader, academic peer
- Debra Kernstock, MS, Katie Poole, MS, Professor Ralph Garcia-Reilly
- And [Professor John Santerre](#), PhD - congrats on [working](#) with **Andrew Ng Sept 2023!**

With all forms of wisdom did she build her house; she carved out its seven pillars. She prepared her meat, mixed her wine, and also set her table. She has sent out her maidens, she announces upon the wings of the city heights: "Whoever is a simpleton, let him turn here!" As for the one who lacks heart, she says to him: "Come, partake of my food and drink of the wine that I have mixed. Leave, O simpletons, and live, and stride in the way of understanding." ~Proverbs 9:1-6