

## Brian Hogan, M.S.

Part-time Instructor of Computer Science  
School of Professional Studies  
Clark University  
950 Main Street, Worcester, MA, 01610, 508-793-7218



CHALLENGE CONVENTION.  
CHANGE OUR WORLD.

[bhogan@clarku.edu](mailto:bhogan@clarku.edu)  
<[in](#)><[github](#)><[portfolio](#)>

### EDUCATION

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

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

Harvard University, Cambridge, MA Sept 1997 - June 1999  
C.S.S., Business Administration, Harvard Extension School  
Eight full-term, in-person classes.

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

### INSTRUCTOR EXPERIENCE

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**Instructor** School of Professional Studies, Computer Science, graduate  
Clark University, Worcester, MA

[MSCS-3050](#) *Software Life Cycle, on-ground* Fall 2023

- Design concepts, paradigms, quality, testing, configurations.

[MSCS-3070](#) *Survey of Systems and Programming Language* ibid.

- Bits, von Neumann, LC-3, Assembly, data structures, IO, C, C++.

**Instructor** Department of Computer Science, undergraduate, in-person Feb 2022 -  
Southern New Hampshire University, Manchester, NH

[IT-304](#) *Systems Design and Analysis* Fall 2022, Fall 2023

- Instruct [10](#) system design methods and ontology information science
- Emphasize practical design applications in Python architecture.
- Contracted for lecture and media instructional design.

[IT-226](#) *Communication in STEM Professions* Spring 2023

- 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](#) *Intermediate C++* Summer I 2023

- Summer tutor contract for C++ programming instruction.

**Teacher** ICARUS AI E-Learning, 100 Wilshire Blvd, Santa Monica, CA Fall 2022

> [7.Pillars.of.Python.Essentials](#)

- Built a specialized data transformation and Python coding [how.To](#)

**Tutor** Data Science and Programming, <https://tutormatchingservice.com> 2019 - 2020

- [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
- **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**     *Equestrian field sports*     2002 – 2012  
Gone Away Farm, Voluntown, CT (part-time)
- Taught horsemanship for adult and junior riders.

## **CURRICULUM AND CONTENT CREATION**

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- Creative Writer**     [Noodle](#), New York, NY, 10011, [Elissa Lappendga](#), contract     Mar - Aug 2023  
*graduate course: COSC-526, Introduction to Data Mining @ [www.utk.edu](http://www.utk.edu)*
- 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  
*Coursera course: Google 2023 Advanced Data Analytics Certificate*
- [Lead](#) writer for course 2 of 7, [Get Started with Python](#).
  - Produced 21 instructional readings and 10 codebooks with >3000 lines.
  - Developed two capstone projects integrating OLS, LR, MLR, logistic, chi-sq, supervised learning, and SVM.
  - Reviewed and edited scripts for verbiage, constructs, and continuity.
  - Trained in 18 E-Learning multimedia assets like prompts and quizzes.
  - Passed [coding](#) entrance exam and admitted to [foo.bar.withgoogle.com](http://foo.bar.withgoogle.com)
- Instructional Design, Southern New Hampshire University, Manchester, NH**     02/22 –
- A. *course: [IT-226](#) Communication in STEM Professions, uncontracted*  
Update course with advanced persuasion writing skill methods and
- Instill polysyllabic learning by germinating 2-9 [syllable word trees](#) from diverse content to form voice pillars and authenticity.
  - Provide writing assistance learning technology, like entropy.
- B. *course: [IT-304](#) Systems Design and Analysis, contracted*
- Update learning objectives, weekly lectures, re-engineering methodologies, Python materials, and interactive learning moments.
- Curriculum Design**     **ProModel Corporation, Consulting, Orem, UT**     2004 – 2014  
Performed instructional design and [technical curriculum](#) development for
- **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 Summer Programs, Norwood, MA**      04/21 – 06/21

- [Designed](#) a high school AI intensive course w ethics and use cases.
- Provided 50 pages, 10,821 words, for in-person instructor training.

## 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 archicture 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 Fulfilment 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
<a href="#">Python</a> , R	<a href="#">C++</a> , Java, SQL, VBA	Linux, SMSS	Spyder, Visual Studio

- Representational State Transfer (REST) [APIs](#) with 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: (~Sphinx), Photoshop, Illustrator, Help/Manual, LaTeX, and Markdown.
- [Research](#): [fact sheets](#), X9 bibliographic database, literature review and summary.
- [Technical writing](#) including circuitry, robotics, SaaS, and methodology.

## INSTRUCTIONAL READINESS

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### 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 (REST APIs, regex, mongoDB).
- Introduction to advanced NLP like lexical semantics, POS, negation.
- Introduction to database administration concepts and management.

### 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.

## ADVISING & CASE WORK

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### 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.
- Now, at 22, efforts focus on reaffirming 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

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### Donor

**Southern New Hampshire University**, Manchester, NH

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

07/22 -

- Partner with municipality to provide students with monitors (11), cables(+10), and miscellaneous items like graphic boards (3).

### 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 INTERESTS

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

Assessing polysyllabics and logodaedaly could support the testing and development of new authenticity scoring mechanisms. The intention isn't to discern plagiarism but create i) a discourse score and ii) a programmatic means to improve information exchange quality by adding polysyllabicisms and periphrastics.

- Encourage students to inventory work for authenticity scoring substrate.
- Inventory diverse polysyllabic words into syllable trees.
- Transposition of syllable trees [REDACTED] using LDA et al.
- Form [REDACTED] matrix [REDACTED] complexity index.
- Validate score mechanism and methods for accuracy and effectiveness.
- Release a [REDACTED] library on [pypi.org](https://pypi.org) to expand the user community.
- Actively working in [OpenAI](https://openai.com)'s REST API to implement test model environments.

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

## RESEARCH EXPERIENCE

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Research <a href="#">Volunteer</a>	23-bed, 63-nurse and associate acute care floor Winchester Hospital, Winchester, MA Manager: Debra Barbuto, RN, MSN, <a href="mailto:debra.j.barbuto@lahey.org">debra.j.barbuto@lahey.org</a>	06/21 - 01/22
A. Investigated the efficacy of evidence-based purposeful hourly rounding on patient <a href="#">falls</a> 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 <code>data.table</code>		
• Outcomes: <a href="#">adopted</a> purposeful hourly rounding.		
B. Assisted in evaluating call bell <a href="#">signal</a> standardization across units to help distinguish noncritical from critical care requests.		
• Located call bell <a href="#">parts</a> ; IT unable to perform system upgrade.		



## PROFESSIONAL DEVELOPMENT

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- i. **Generative AI Training at DeepLearning.AI and Open.AI** Spring 2023 -  
*course: ChatGPT prompt engineering for developers by Isa Fulford and Andrew Ng*
  - Performing intensive prompt training
  - 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

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- 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

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- A. **Fix-it, First Congregational Church, Winchester, MA, karenbellacosa@me.com** 03/23,06/23
  - Perform repairs of lights, bits, and bobs 3-4 times per year at church bazaar.
- B. **Wikipedia Language Editor, Account ID: bhogansnhu.edu** 08/22 -
  - 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

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Dr. Kim Bo, Ph.D.

Computer Science Department [Chair](#), Professor  
School of Engineering, Technology, and Aeronautics  
Southern New Hampshire University  
2500 North River Road, Manchester, NH 03106  
phone: 603-626-9458  
email: [b.kim@snhu.edu](mailto:b.kim@snhu.edu)

Professor Arana Fireheart

Assistant Professor of Information Technology  
Computer Science c/o School of Engineering, Technology, and Aeronautics  
Southern New Hampshire University  
2500 North River Road, Manchester, NH 03106  
phone: 603-626-9458  
email: [a.fireheart@snhu.edu](mailto:a.fireheart@snhu.edu)

Dr. David Hoffman, Ph.D.

Children and adolescent psychologist  
[David Hoffman](#), PhD, LLC  
1 Mount Vernon Street  
Winchester, MA 01890  
phone: 781-437-7370  
email: [dh@dhphd.com](mailto:dh@dhphd.com)

Professor Humayun Kahn, MS, MBA

Adjunct Faculty, Syracuse University  
<https://www.linkedin.com/in/hhkhan/>  
phone: 603-890-9870, email: [hkhahn@syr.edu](mailto:hkhahn@syr.edu)

Jim McCoy

Instructional Designer at Google, Learning Lab  
Grow with Google Career Certificates  
Advisory Board at University of Houston  
phone: 832-661-7145  
[https://www.linkedin.com/in/ideascomealive/](https://www.linkedin.com/in/ideascomealive/jimmccoy@google.com)  
[jimmccoy@google.com](mailto:jimmccoy@google.com); [ideascomealive@gmail.com](mailto:ideascomealive@gmail.com)

Robert K. Stephens

Polaroid Inventor and Multiple Patent Holder  
3 Ginn Road  
Winchester, MA  
781-570-9489, email: [bob.stephens43@yahoo.com](mailto:bob.stephens43@yahoo.com)

Daneille DeBye, RN, NP

Nurse Practitioner  
99 Midgley Ave  
Warwick, RI 02886  
phone: 781-315-1736, email: [danelledne@gmail.com](mailto:danelledne@gmail.com)

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