SYDNEY MURPHY

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EDUCATION

CARNEGIE MELLON UNIVERSITY   Pittsburgh, PA
Master of Science in Business Analytics - MSBA   *GPA: 3.7/4.0*   2025
- Coursework: Data Analytics in Finance, Statistical Foundations of Business Analytics, Machine Learning I & II, Business Value for Integrative Analytics, Optimization, Data Management
- Capstone: Developing a machine learning model for firearm detection using image preprocessing, feature extraction, and explainable AI, with applications in computer vision, risk analysis, and AI ethics

COLUMBIA UNIVERSITY   New York, NY
Master of Science in Journalism, Data Specialty   *GPA: 4.0/4.0*   5/22
- Coursework: Data Analytics, Computational Journalism, Data Management, Reporting on Healthcare
- Web developer for Columbia's Chapter of The Society of Professional Journalists
- Master's Thesis: Detailed research report on lack of racial and ethnic diversity in clinical Alzheimer's research

WHEATON COLLEGE   Norton, MA
Bachelor of Science in Neuroscience   *GPA: 3.7/4.0*   5/21
- Membership: Investment Club; Model UN Head Delegate/Finance VP; Admission Guide; Editor-in-Chief, The Wire
- Study Abroad: Universität Regensburg, Language Immersion in Germany
- Academic Excellence Award: Hedda Korsch Prize in German Studies
- Undergraduate Research: Under Laura Bohn Case, analyzed vocabulary and linguistic patterns in German poetry
- Undergraduate Thesis: A Linguistic and Neuroscientific Analysis of Bilingualism: Comparing Cognitive Benefits

RESEARCH SKILLS & INTERESTS

- Applications of **machine learning** and **artificial intelligence** in computational biology, with a focus on predictive modeling and drug discovery
- Leveraging **graph neural networks** for analyzing complex biological networks and identifying patterns in protein interactions
- Exploring the integration of **bioinformatics tools** and AI to address healthcare inequities, particularly in underrepresented populations

LAB EXPERIENCE & PUBLICATIONS

ICUC LAB   Norton, MA
Lab Technician   8/20 – 5/21
- Trained and mentored students in lab technology usage, supporting their independent research projects
- Conducted microscopy, digital imaging, and routine maintenance of laboratory equipment for research analysis
- Rodent Handling & Procedures course completion through Wheaton College

MIT Science Policy Review Volume III, Review Article, MIT   Norton, MA
Co-Author   8/21 – 5/22
- Researched and co-authored a comprehensive literature review on product quality control in generic drugs

Advances in Virology, Review Article, Wheaton College   Norton, MA
Co-Author   9/20 – 11/20
- Investigated and co-authored a literature review on SARS-CoV-2 viral shedding detection methods

PROFESSIONAL EXPERIENCE

MAVENWIT   London, UK
Software Engineer Intern   6/24 – 9/24
- Independently developed an application for the company using an external API, enhancing data integration and streamlining internal workflows
- Designed, developed, implemented, and tested software solutions for partners using Java, R, Python, CSS, HTML, and PHP, contributing to the successful completion of a major organizational overhaul of the site
- Assisted colleagues and end-users with technical inquiries, helping them understand complex system architectures, perform troubleshooting, and debug issues

MURPHY VENTURES   Phoenix, AZ
Investment Analyst   8/23 – 6/24
- Managed equities and real estate portfolios for Murphy Ventures, a prominent Arizona-based family office
- Equity Research: Applied stat arb, sentiment analysis, and event-driven strategies to generate alpha. Designed, tested, and managed systematic trading strategies with a focus on TMT, global internet, and consumer sectors
- Real Estate: Oversaw real estate investments, identifying value-add opportunities and exploring alternative assets, including water, farmland, and data centers

HEALTHDAY New York, NY
Product Manager 7/22 – 8/23
- Strategic Oversight & Team Leadership: Led a website redesign, increasing UX scores by 40% through advanced HTML/CSS and user-focused improvements
- Data-Driven SEO & Web Analytics: Developed data-driven SEO strategies, leveraging Semrush, Google Analytics, A/B testing, and user behavior analysis
- Product Roadmap & Stakeholder Management: Managed science-based products (PBS, Janssen Care Path, Elsevier), using data visualization to translate research into accessible formats

UNITED NATIONS New York, NY
Reporting Intern 3/22 – 7/22
- Data Analysis: Conducted data analysis on ethnographic studies triangulated across African regions in the mobile app space. Analysis contributed to understanding and improving cross-cultural data communication
- Technical Reporting: Utilized SQL and MongoDB to query and extract relevant data for comprehensive report on Africa Amnesty Month detailing interpretation of weapons collection data, instrumental report on policy decisions

TALENTNOOK Dublin, CA
Cognitive Science Research Intern 12/20 – 5/21
- Designed and analyzed focus groups to evaluate parent engagement in childhood education on UX design team
- Conducted and published a comprehensive report on the impact of parental engagement in childhood education
- Led research and design for the Minimum Viable Product (MVP) and CSS-based product interface
- Collaborated on product development to enhance user experience and engagement

BLENDtw MEDIA New York, NY
Managing Editor 3/19 – 3/21
- Customer-Focused: Led SEO strategy leveraging analytical tools, Python and SQL, keyword analysis, growing the company from daily web traffic of 1K to 100K within 2 years
- Leadership: Managed editorial team of 100+ collaborating with and training content creators
- Developed and maintained dynamic website using WordPress and API integrations, enhancing user experience and ensuring seamless functionality through custom plugins, trained incoming developers on HTML, CSS, PHP

RECOVIA REHABILITATION CENTER Phoenix, AZ
Medical Intern 6/18 – 8/18
- Shadowed lead psychologists and psychiatrists specializing in opioid addiction treatment and recovery
- Observed multidisciplinary approaches to rehabilitation, including therapy and medication-assisted treatment
- Gained insight into patient care strategies within a clinical rehabilitation setting

VOLUNTEERISM

MIT CLUB OF BOSTON Cambridge, MA
Head of Marketing 8/22 – Present
- Design and executed marketing campaigns, including targeted outreach, for the annual biotech conference
- Build connections with alumni and researchers, managing analytics to enhance event impact and refine strategies

WHEATON COLLEGE MUN ALUMNI ASSOCIATION Norton, MA
Committee President 5/22 – Present
- Strategize and market 5+ collaborative Wheaton Alumni Association events annually
- Wheaton College Alumni Strategic Planning Committee President

AMERICAN FIELD SERVICE Phoenix, AZ
Returnee Alumni, Liaison 8/19 – Present
- Facilitate cross-cultural exchange by supporting international students and host families through AFS Intercultural Programs
- Act as a liaison to resolve cultural and logistical challenges, fostering positive experiences for participants

ATLANTIS MEDICAL FELLOWSHIP Belgrade, Serbia
Medical Fellow 6/19 – 8/19
- Shadowed physicians in a teaching hospital, observing medical practices, pathological research, and patient care
- Gained insights into challenges in medical practice, fostering a passion for equitable healthcare research

TEEN LIFELINE Phoenix, AZ
Grief Counselor 2/14 – 11/21
- Conducted risk assessments and interventions to address acute crises and documented call data for analysis
- Applied psychological techniques to de-escalate high-stress situations and contributed to mental health research

ADDITIONAL INFORMATION

LANGUAGES: Fluent in English; Written proficiency in German, Dutch, Spanish
TECHNICAL SKILLS: Python, R, JavaScript, SQL, MongoDB, PHP, CSS, MATLAB, Tableau, PowerBI, ApacheSpark, J-Flow, Sigma, PyTorch, Nonlinear PDEs, GNNs, NLP models, Deep Learning Frameworks, Bioinformatics