**Lawrence Gray, Ph.D.**

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**SUMMARY**

AI Leader and Ph.D with proven success delivering $6M+ in enterprise ML solutions while driving technological innovation across industry and academia. Serving as Adjunct Professor and Program Director at Georgetown University, bridging the gap between cutting-edge AI development and practical education. Track record of providing technical direction to 15+ engineers, transforming operations (4x productivity gains), and championing open-source initiatives. Recognized thought leader with keynote speaking engagements at major tech conferences, including StrangeLoop and PyData NYC.

**SKILLS**

* **AI & Engineering:** Deep Learning (Transformers, MOEs, CNN), Statistical Analysis, Machine Learning, Natural Language Processing, Data Analysis & Visualization, Business Intelligence
* **Leadership:** Technical Direction & Strategy, Engineering Risk Assessment, Cross-function Team Leadership (AI Strategy, Business Development, Marketing), Engineering Talent Management, Career Development & Mentorship, Technical Hiring, Project Management
* **Software:** Python for Data Science & ML (Pandas, Numpy, Scikit-learn), Deep Learning Frameworks (PyTorch, Keras), NLP Libraries (NLTK, gensim), Web Development (Flask), SQL, Version Control (Git)

**PROFESSIONAL LEADERSHIP**

**Director of Machine Learning Engineering, KUNGFU.AI 2022 - 2025**

* Successfully delivered on every project that I worked on, valued at over $6 million across 12+ enterprise projects, including:
  + Developed GenAI system using transformer architecture that reduced adverse brand-related tweet response time from hours to minutes
  + Implemented RandomForest time series forecasting model achieving 20% accuracy improvement over 5-year projections, replacing months-long manual research process for multifamily housing demand
  + Engineered BERT-based NLP solution achieving 95% accuracy in data harmonization, automating work previously requiring 30+ staff hours
  + Deployed XGBoost model that tripled click attribution accuracy by effectively identifying and filtering fraudulent clicks
* Directly managed 7 engineers while providing technical direction and mentorship to a broader team of 15 engineers to drive technical excellence and innovation across multiple AI initiatives.
* Worked with cross-functional teams and advised non-technical executive stakeholders on unblocking critical challenges and streamlining operations.
* Strengthened client engagement to foster lasting partnerships with enterprise customers, including the Department of State, Deloitte, DataRobot, and Wendy’s, and translate business requirements into custom-tailored AI solutions at scale.
* Served as the technical advisor to Johns Hopkins University to validate a skin toxicity detection system after cancer radiation treatment while managing technical risk, optimizing resource allocation, and maintaining alignment with project goals.
* Promoted an inclusive engineering culture around shared project ownership by empowering tech leads to proactively gather team feedback, facilitate a harmonious ideation process, and build trust between team members.

**Head of Data Science, KPMG Spark 2020 - 2022**

* Defined the data vision and strategy for the entire organization, including the development of AI and automation initiatives and a program that up-skills non-technical workers for data analyst positions, increasing data literacy by 10%.
* Reduced customer churn, implemented custom pricing dependent on the utilization of services, and optimized customer lead forecasting while working with executive stakeholders to align data science and corporate strategies.
* Developed the Automation/AI adoption roadmap & re-engineered jobs across the organization with a cross-functional team.
* Led the development of a next-generation ML/AI capability and operating model as part of the reinvention and reengineering of bookkeeping across the enterprise based on a new team-based structure to increase productivity 4-fold.
* Created machine learning analytic capabilities and algorithms to streamline bookkeeper decision-making and increase the accuracy of transaction categorization & implemented next-best-action recommendations to optimize accounting outcomes.
* Reduced customer churn by 10% by identifying and directly addressing the causes of churn within the first 100 days of customer acquisition using advanced customer metrics and XGBoost.

**Data Scientist, Maxar Technologies 2019 - 2020**

* Designed and developed methods, processes, and systems to consolidate and analyze unstructured and diverse big data sources and generate actionable insights and solutions for client services and product enhancement.
* Provided government clients with the ability to detect evasive and abnormal flight patterns of aircraft entering the United States and identify ships that may run aground in environmentally protected areas.
* Built Data Science pipelines for the creation of ML Classification models using Python.
* Collaborated with the product and service teams to identify questions and issues for data analysis and experiments.
* Created software programs, algorithms, and automated processes to cleanse, integrate, and evaluate large datasets.

**Postdoctoral Fellow - Computational Biology, National Center for Biotechnology Information 2013 - 2019**

* Developed predictive models for food-borne outbreak detection in collaboration with FDA/CDC
* Developed computational methods for RNA structure comparison and functional annotation, enabling automated classification of novel RNA structures.
* Implemented computer vision and ICP algorithms for 3D structural alignment

**ACADEMIC & EDUCATIONAL LEADERSHIP**

**Program Director - Data Analytics, Georgetown University July 2022 - Present**

* Drive program innovation and growth, serving 300+ students across Data Analytics, Data Science, and GenAI certificates
* Source and recruit faculty while ensuring curriculum stays aligned with industry demands
* Spearhead development of new certificate programs based on emerging technology trends
* Successfully manage and oversee faculty team, maintaining program quality and educational standards

**Adjunct Professor, Georgetown University 2019 - Present**

* Design and teach advanced courses in Data Science, Data Analytics, Data-Driven decision-making, and GenAI
* Develop practical, industry-relevant curriculum incorporating real-world case studies and projects
* Consistently receive high student satisfaction ratings for making complex technical concepts accessible
* Pioneer new teaching methodologies for remote learning environments

**Lecturer, Maryland Institute College of Art 2020 - 2024**

* Taught the Master’s level course Python for Data Analytics and Visualization, which has enabled 100 students
* Created a comprehensive curriculum enabling students with no prior programming experience to successfully complete capstone projects

**EDUCATION**

* Ph.D. in Cellular and Molecular Physiology, Johns Hopkins University, School of Medicine
* Bachelor of Science in Biology with Minor in Chemistry, California State University - Fullerton

**OPEN-SOURCE LEADERSHIP**

**Chair - Board of Directors, NumFocus 2022 - 2025**

* Guide Strategic direction of the organization supporting critical open-source science computing tools

**Core Contributor/Maintainer, Yellowbrick 2018 - Present**

* Contributed to the core features within the v1.0 release

**RECENT AND UPCOMING TALKS**

* [PyData New York City, 2022](https://nyc2022.pydata.org/cfp/talk/7EH8RM/) [[video](https://youtu.be/CQlQZRWHVcY)]
* [Strange Loop, St. Louis, MO September 2023](https://www.thestrangeloop.com/2023/building-strong-and-sustainable-open-source-projects-lessons-from-an-epic-road-trip.html) **[**[**video**](https://youtu.be/TE84-XFUT2w?si=MkcaC0kiQThD6h5n)**]**
* [**PyData New York City, 2024 - KeyNote Speaker**](https://nyc2024.pydata.org/cfp/talk/BEUE3C/) **[**[**video**](https://youtu.be/DKNT_AEmjEw?si=2EQ7fgPuXf-LJQtI)**]**
* [**OSCON March 2025 - Keynote Speaker**](https://ospo.gwu.edu/open-source-conference-gw-oscon)