Jared L Bailey, MBA CPCU ARe

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STATEMENT OF PURPOSE

Leveraging a decade of experience in predictive modeling, statistics, and data science as I transition into a role applying AI within edge devices and robotic systems.

EDUCATION

- Duke Master of Engineering in Artificial Intelligence (ETA Dec 2025)
  - Multiyear co-organizer and emcee of Duke AI Hackathon, OpenAI sponsorship, 150 presenters
  - Co-founder and president of AI Competition Club
  - Teaching 3 different 2-hour lectures about computer vision at Duke's Innovation Co-Lab
- Duke Graduate Certificate in Robotics & Autonomy (ETA Dec 2025)
  - Robotics research through Duke Robotics – Brain Tool Laboratory
  - Member of the Duke Robotics Club, building an autonomous underwater vehicle (submarine)
- Great Learning Course – Generative AI and NLP, 4 Months (2024)
  - Conversational AI with LangChain, LangChain assistants, prompt engineering, retrieval augmented generation (RAG), text classification, summarization and generation
- Stanford Professional Program Course - Natural Language Processing (2022)
- AI & Machine Learning Postgraduate Program – University of Texas at Austin (2021)
  - Project based application of machine learning using Python
  - 1st of 31 teams in machine learning accuracy competition (72 hours, max team size of 3)
  - Linear and logistic models, random forest, boosting, artificial neural network, machine vision, natural language processing, clustering
- MBA – University of North Florida, 3.8 GPA (2012)
  - ETS MBA Major Field Test (ranking for MBAs) – Top 1% of MBA graduates nationwide
- BA – University of Florida, 3.6 GPA (2007)
  - AA – UF Honors Program (2006)
- Various CAS and The Institutes exams covering risk, Frequentist and Bayesian predictive modeling

TECHNICAL SKILLS

- Coding Languages, Dashboards, Tools & Abilities
  - Python, R, SQL including dynamic SQL using stored procedures, Rust (beginner), C++ (beginner), Databricks, Streamlit, Git, Fusion 360, Docker, ROS2, Pytorch, Tensorflow, Linux, AWS, Tableau
- Hardware
  - Raspberry Pi, Arduino, ESP32, NVIDIA Jetson Nano
- Microsoft Applications
  - Excel including Macros and VBA, Access, PowerPoint, SharePoint, Word

DUKE AI MASTER OF ENGINEERING COURSES

- Previous and Current Courses of Note
  - Introduction to Robotics, Robotic Manipulation, AI on in the Physical World (Independent Study), Operationalizing AI, Deep Learning Applications
- Upcoming Courses of Note
  - Robot Learning, Linear System Theory

PROFESSIONAL EXPERIENCE

Duke University – Durham, NC **Jul 2024 to Present**

Teaching Assistant, AI Master in Engineering Program

- Preparing and teaching lectures, assisting with student inquiries during office hours, grading assignments and exams, organizing online classroom materials.
- Courses include:
    - Python Bootcamp – Summer 2024
    - Modeling Process and Algorithms – Fall 2024, Spring 2025
    - AI in the Physical World – Spring 2025

Thrivent – Durham, NC (Remote) **Jan 2023 to May 2024**

Senior Data Scientist, Commercial Analytics and Underwriting Innovation

- Designed and built a non-NLP text extraction and search application for large medical PDFs. Web app built using Streamlit, python, and computer vision. Tool saw FTE savings of 2-3 employees from claims, as well as anticipated 3-4 FTE savings underwriting upon UW department adoption.
- Won the 2023 companywide Hackathon (over 30 teams). Presented our tool to 3 C-suite members during a private meeting. The hack featured a question/answer extractive LLM. The model was applied to electronic health records to assist underwriters and claim consultants gather insights from these large documents. Hack planned as add-on to previously mentioned Streamlit web app.
- Developed an automated sentiment analysis tool for the Voice of the Customer survey. Tool used 3 NLP models to identify customer complaints, helping meet regulatory required complaint response time.
- Automated select case manager email communications with financial advisors. Emails focused on underwriting approvals, declines, and outstanding requirements.
- Created Thrivent's first set of underwriting triage models using XGBoost and Databricks. Models focused on predicted risk class placement.
- Mentored actuary building CatBoost model for annuity surrender identification.
- Authored Model Governance Standards covering 2 business areas. Standards followed newly formed corporate Model Governance Policy. As member of Model Governance Committee, I was selected as 1 of 3 members to present Model Governance Policy to executives for approval.
- Developed and taught Python, SQL, Prophet, and Databricks training courses for actuarial department.
- Lead organizer of Thrivent's first Advent of Code event. Event garnered 100 participants.

Kemper – Chicago, IL **Feb 2021 to Dec 2022**

Catastrophe Management Lead, Catastrophe Modeling and Reinsurance

- Redesigned catastrophe management function for the organization. Set direction and garnered senior management approval for long-term vision, projects, and actions across teams.
    - Kemper was without a catastrophe modeler for several months prior to my arrival. I seized the opportunity to reshape this position and associated work in an entrepreneurial fashion.
- Developed Python GUI application to inspect data files for errors. The focus on data accuracy resulted in correction to dozens of longstanding data issues spanning home characteristics, line of business designations, and external form reporting. Resulted in reinsurance savings of $800k per year.
- Conceptualized and coordinated Kemper's first Wildfire (2021) and Severe Convective Storm (2022) Forums, drawing on insights across Kemper teams and broker analytics. Department-wide actions followed which resulted in: several rounds of inspections to non-renew the worst priced homes - saving over $2m, improved underwriting guidelines, a new approach to identifying growth regions using notional risks. Kemper's reinsurance broker requested access to the analytics upon seeing results.
- Provided hurricane and severe convective storm rate relativity recommendations using vendor models, GLMs in R, and Tableau dashboards for end users. Updated rate relativities favored home characteristics which were previously poorly priced and lacking adequate representation in Kemper's book.
- Wrote code to automate data processes, call APIs to predict catastrophe loss on new business, create notional risks for modeling, pull bulk claims data from PDFs, and delete immaterial vendor emails.
- Taught frequent Python and R trainings across teams. Led 2 company-wide Advent of Code competitions.

Earnix – Newton, MA **Jun 2020 to Feb 2021**

Professional Services Consultant, Americas - Insurance

- Demonstrated Earnix's premier product, Price-It, with in-depth presentations to insurance management teams across lines of business during pre-sales.
- Served as workstream lead for Professional Services concerning software implementation design for Earnix's largest customer to date.
- Designed and presented the first US personal and commercial auto demos of Personalize-It product.
- Ran software evaluations using potential client data. Evaluations were done over multiple weeks.
- Built predictive attrition model with client data to showcase software capabilities.
- Automated Price-It software data and model build, saving 1 hour on software evaluation preparations.
- Developed ROI calculator using R Shiny to assist sales team presentations.

Aon Benfield – Chicago, IL **Jan 2018 to Jun 2020**

Senior Actuarial Analyst, Predictive Analytics

- Formalized, automated, and implemented department procedure for Cat Score execution. Previous procedure errors caused client losses of $10m. No errors reported for multiple years after implementation.
- Modeled, evaluated, and strengthened the Cat Score notional grid for AIR, IF, and RMS. Work saved a failing project owned by 3 co-workers. Resulted in fixes to several long-standing notional grid issues.
- Lead significant model testing, and formalized department modeling and reinsurance allocation procedures of Aon's internal catastrophe model: Impact Forecasting. This led to an extended opportunity to work half-time with the Impact Forecasting team to prepare for their first model submission to the Florida Commission on Hurricane Loss Projection Methodology.
- Created hurricane and flood rating plans using GLMs in R, coupled with Tableau dashboards.
- Instructed multi-day Fundamentals of Reinsurance courses: Overview, Excess of Loss, and Quota Share.
- Evaluated client misuse of secondary modifiers for catastrophe modeling using k-medoids in R.
- Managed department's SharePoint team, administering several large internal SharePoint sites.

GEICO – Chevy Chase, MD **Jan 2017 to Jan 2018**

Actuarial Assistant, Pricing

- Constructed rate indications and proposed rate changes in 200+ person meetings.
- Produced automobile and umbrella rate filing packages for Southeastern states. Discovered long-standing mistake in nationwide umbrella rating plan that allowed for large policies with premiums of $5.
- Designed a k-means solution to territory grouping using Excel Solver.
- Discovered and assisted in correction of major bug found in GEICO's execution of IBM Watson.
- Managed the Pricing SharePoint site for 150 person team.

Aon Benfield – Chicago, IL **Jun 2015 to Jan 2017**

Senior Catastrophe Analyst, Catastrophe Modeling

- Modeled losses and produced catastrophe loss allocations for personal, commercial, and automobile exposures using RMS RiskLink and AIR Touchstone/Catrader.
- Created comprehensive modeling analytics presentations for clients using SQL, Excel, and PowerPoint.
- Developed office-wide Excel/VBA solutions to increase efficiency & provide creative data visualizations.
- Managed and redesigned the SharePoint site for the 100 person department as SharePoint team leader.

Small Business Development Center at UNF – Jacksonville, FL **Aug 2010 to Jun 2015**

Business Consultant

- Developed Excel/VBA tool and video manual to assist international trade consultants in foreign market selection using relevant data. Received the state-wide Innovative Service and Best Practice of the Year Award and mentioned by name in the US Congressional Record by Congressman Ander Crenshaw.
- Consulted with nearly 500 small businesses focusing on: financial analysis, website development, internet marketing, pricing strategies, and financial statement projections.
- Created the state standard for financial analysis and projections, with accompanying presentations.
- Developed and presented dozens of multi-hour business courses to current and prospective owners.
- River City Mentor Walk Race Director. Event paired 50 experienced and new owners for a 5k walk.