Baasil A. Pasha

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SUMMARY

Quantitative and technically driven early-career data and ML professional with hands-on experience building retrieval, LLM, and optimization-based systems for research and real-world workflows. Background in economics, mathematics, and data science, with strong foundations in statistics, econometrics, machine learning, and technical problem solving. Comfortable translating ambiguous problems into analytical tools, models, and deployable systems.

TECHNICAL SKILLS

Programming: Python, SQL, R, MATLAB, C/C++ | ML: PyTorch, RAG, NLP, LoRA/PEFT, LLM fine-tuning
Statistics: Regression, A/B testing, hypothesis testing, econometrics | Tools: Tableau, Excel, Git, Linux

EXPERIENCE

Machine Learning Research Assistant, University of Bridgeport, *Bridgeport, CT* **June 2025 – Present**

- Developing efficient Video LLM architectures by introducing a global summary token and structured attention to preserve cross-frame context while reducing compute and memory costs.
- Fine-tuned 7B-13B parameter LLMs (Llama 3, Phi-3) using LoRA/PEFT, achieving 88% accuracy on a 227-class multi-label classification task.
- Built and optimized domain-specific RAG systems (LlamaIndex), improving financial sentiment question-answering accuracy to 98.4% through retrieval and embedding tuning.
- Conducted ablation studies benchmarking full-frame vs. summary-token attention to analyze trade-offs in latency, memory usage, and model performance.

Machine Learning Engineer, Neuron Tech LLC, *Beaverton, OR* **January 2026 – Present**

- Built a local patent-search platform for prior art review, integrating document ingestion, retrieval, ranking, and analyst-facing workflows.
- Designed and deployed on-prem infrastructure for private search over sensitive IP without external cloud services.
- Implemented semantic retrieval and ranking pipelines using embeddings and NLP-based relevance logic to improve precision in patent and prior-art discovery.
- Balanced privacy, retrieval quality, and system efficiency for technical research workflows under limited hardware and storage constraints.
- Applied the platform in live patent-search workflows, reducing manual search effort and improving speed.

Computer Science Lab Aide & Mentor, Whitman College, *Walla Walla, WA* **January 2023 – December 2025**

- Provided technical support and assistance to 50+ students and faculty per semester in a college computer science lab, troubleshooting software, hardware, and development-environment issues.
- Mentored students in core CS concepts including debugging, data structures, and algorithmic problem solving.
- Collaborated with faculty to design and refine lab exercises and instructional materials.

Manufacturing Technician, Intel, *Aloha, OR* **August 2022 – December 2022**

- Operated and maintained laser and metrology tools in a precision manufacturing environment, supporting accurate and reliable production processes.
- Worked closely with technicians and engineers on overnight shifts to troubleshoot tool issues and maintain safe, efficient operations.
- Received a safety recognition award for strong adherence to clean-room and workplace safety protocols.

Mayor's Youth Advisory Board Vice-Chair, **City Hall**, *Beaverton, OR* **September 2019 – September 2021**

- Organized an annual youth summit, fostering dialogue and engagement among young residents on critical diversity issues.
- As elected Vice-Chair, represented Beaverton at the esteemed National League of Cities Conference in Washington, D.C., amplifying the city's voice on a national platform.

EDUCATION

Whitman College, Walla Walla, WA December 2025
Bachelor of Arts in Economics and Mathematics | Minor: Data Science
Relevant Coursework: Machine Learning, Probability Theory, Econometrics, Statistics, Mathematical Programming, Data Structures, Linear Algebra, Graph Theory