Lane Hale

Email: lanehale1@gmail.com   **Phone**: 970-388-9213
Website: laneh.dev   **Location**: Windsor, CO 80550
GitHub: github.com/lanehale

Work Experience

Professional Development & Transitional Employment   Dec 2024 – Present

- Actively upskilled in AI/ML (PyTorch, Hugging Face, NLP, vision classification, airline chatbot with live demos), advanced C++, and modern Java backend development (Spring Boot, PostgreSQL, Docker, Kubernetes) while holding customer service and logistics roles emphasizing accuracy, compliance, and team collaboration.

Software Developer, Air Search – Fares & Shopping   Apr 2017 – Dec 2024

Travelport (via Tata Consultancy Services), Denver, CO

- Designed high-performance airline reservations applications using zTPF assembler, C, C++, and Prolog, supporting millions of daily transactions with 99.99% uptime across global GDSs (Worldspan, Galileo, Apollo).
- Modernized rule-based pricing and fare logic using Prolog and C, transitioning real-time shopping systems from manually updated database tables to automated layouts for improved maintainability and accuracy.
- Contributed to CI/CD pipelines using Perl and Jenkins, enabling defect-free deployments and faster release cycles in Agile environments.
- Mentored junior developers in zTPF, C, and Prolog programming, preserving critical institutional knowledge.

Software Developer, Payment Solutions & Air Pricing   Jun 2000 – Apr 2017

Sabre Holdings, Southlake, TX (Remote, Windsor, CO)

- Recognized as elite troubleshooter for resolving hundreds of zTPF and C++ production issues annually.
- Optimized zTPF and C++ transaction workflows, reducing response times by 30% saving $5M annually.
- Performed data structure optimizations for pricing algorithms, including Multiple Passenger Combinability and Priceable Unit tuning, achieving 10-20% path length improvements and significant performance gains.
- Developed secure payment integrations in Java and zTPF for 300M+ transactions per year, with 100% change success over 857 days.
- Collaborated across teams to integrate zTPF with Java-based open systems using JSON, SOAP, and XML interfaces, enabling scalable microservices architecture.

Software Developer, GlobalFares Development   Jan 1998 – Jun 2000

Galileo International, Denver, CO

- Completed 12-week zTPF assembler training four weeks early, setting performance benchmark for peers.
- Enhanced zTPF assembler applications for international fares, resolving over 75 pricing issues in first year.
- Led zTPF rewrite of stopover/connection logic across 50+ segments, delivering significant resource savings and earning promotion within 18 months.

Skills

- **AI & NLP**: PyTorch, Hugging Face, Transformers, Neural Networks, Text Preprocessing, LLMs, Fine-Tuning, MLOps, Wandb, Colab, Gradio, AeroAPI, Expedia API
- **Languages**: C++, C, Java, Python, Prolog, zTPF Assembler, SQL, Perl, JavaScript
- **Platforms**: Linux, z/OS, zTPFDF, PostgreSQL, AWS, Docker, Kubernetes
- **Tools**: Git, Jenkins, Maven, Spring Boot, GDB, Vim, Jira, JMeter, Postman
- **Methodologies**: Object-Oriented Design, RESTful APIs, JSON/XML, SOAP, CI/CD, Agile, Scrum, TDD
- **Domains**: Airline Reservation Systems (GDS, Fares, PNR, Ticketing), High-Throughput Transaction Processing

Projects

learnpytorch.io Multi-Model Experiements   Apr 2025 – Jun 2025
GitHub: github.com/lanehale/pytorch-deep-learning

- Trained EfficientNetB2 and ViT-B/16 models on a subset of Food101 data, achieving 97% accuracy with visualized loss curves and predictions.
- Deployed interactive demo on Hugging Face Spaces: huggingface.co/spaces/lanehale1/foodvision_mini.

Flight Assistant Chatbot   Jul 2025 – Oct 2025
GitHub: github.com/lanehale/airline-chatbot

- Developed a PyTorch-based chatbot using Hugging Face (BERT) to handle passenger queries (flight status, bookings, round trips, multi-leg trips) with 85% intent accuracy in real-world usage (97% validation, 99% test accuracy) across 1400+ synthetic and Kaggle-derived queries, leveraging 27 years of airline reservation systems experience (Sabre, Galileo).
- Preprocessed 1400+ synthetic and Kaggle-derived queries with Python and NLTK for text cleaning and tokenization, using Kaggle flight datasets to populate variables (e.g., airline codes like UA/WN, airports like LAX/ORD) for regex parsing.
- Integrated FlightAware AeroAPI for real-time flight status and Expedia Flight Listings API for real-time booking options (including round trips and multi-leg flights), demonstrating microservices architecture and ETL pipelines for JSON data processing.
- Deployed Gradio-based web interface on Hugging Face Spaces for scalable inference, showcasing MLOps and web-based UI development: huggingface.co/spaces/lanehale1/Airline_Chatbot.

Education & Certifications

- M.S., Computer Information Systems | Colorado State University
- B.M., Music Composition | Brigham Young University
- Hugging Face NLP Course | July 2025
- learnpytorch.io: Hands-On PyTorch Course | June 2025
- IBM Artificial Intelligence Fundamentals Certificate | June 2025
- IBM z/OS Mainframe Practitioner Certificate | April 2025