John Patrick Ferrer Alvarado

Vancouver, BC | (604) 362-0263 | Portfolio | LinkedIn | Github | contact@johnferreralvarado.com

SKILLS

Machine Learning & AI: Deep Learning, NLP, LLMs (GPT-4, RAG), Generative AI, Reinforcement Learning
Programming & Frameworks: Python, C++, Golang, PyTorch, TensorFlow, OpenCV, FastAPI, Whisper, CLIP
Cloud & MLOps: AWS, GCP, Docker, Kubernetes, CI/CD, Model Deployment, Scalable APIs, Redis, Kafka
Data & Systems: Predictive Analytics, Query Optimization, A/B Testing, Edge AI, Financial AI, Speech AI

WORK EXPERIENCE

AI/Computer Vision Lead, Founder & CEO 🎬🔗🎬 **Jan 2024 - present**
inDoors™ | Startup Simon Fraser University, BC

- Led a team of six to develop and launch a real-time AI-powered automatic map creator and navigation system achieving 100% detection accuracy using PyTorch, CUDA and OpenCV, securing venture capital funding.
- Built a scalable AI pipeline that reduced manual feature annotation time by 90%, expanding datasets from 200 to 10,000 samples in seconds to improve model robustness.
- Designed and launched a downloadable navigation app, integrating A/B testing, UX optimizations,and user surveys to achieve a 95% user satisfaction rate during product evaluations, increasing user adoption by 80%.
- Improved feature delivery by 80% by collaborating with VCs, professors, stakeholders, and teams to refine design docs and track 20+ dependencies, resulting in robust features under real-world constraints and better engagement.
- Managed full project lifecycle using Agile methodologies (Jira, GitHub, GitLab, Kanban), ensuring timely feature delivery and seamless team coordination.

Software Developer & IT Analyst 🔗 **Jan 2020 - Jan 2021**
Microserve Burnaby, BC

- Automated billing tasks for UBC Finance API using C#, PHP, JavaScript, and SQL, reducing processing time by 80% and ensuring 100% client satisfaction.
- Resolved 95% of remote technical issues within SLA targets by managing 100+ tickets via Kanban, using tools like ConnectWise Manage, using custom remote tools and Azure, contributing to improved client retention.

NOTABLE PROJECTS

Full-Stack AI/ML Engineer & NLP Specialist 🔗 **Dec 2024 - Feb 2025**
AI-Powered Legal Document Summarization & Q&A Assistant | Independent Project Vancouver, BC

- Reduced legal document review time by up to 100% by developing an AI tool using GPT-4o mini (or edge AI) and NLP, extracting key insights from contracts and case files, streamlining legal workflows.
- Lowered legal research costs by up to 100% by implementing an AI Q&A assistant, answering legal queries autonomously, minimizing reliance on expensive manual consultations for law firms.
- Increased document processing efficiency by designing a FastAPI backend, enabling real-time summarization and legal Q&A via seamless API integration for legal teams.
- Optimized AI costs by 70% by utilizing GPT-4o mini, reducing document processing expenses to ~0.03 cents per file, making legal AI cost-effective and scalable.
- Enhanced document retrieval accuracy by integrating Retrieval-Augmented Generation (RAG) and fine-tuned legal datasets, improving AI-generated insights for legal professionals.
- Reduced deployment time by containerizing the AI-powered tool with Docker and Kubernetes, enabling seamless deployment across AWS, GCP, and Hugging Face Spaces.

Full-Stack AI Software Engineer (AI Video Processing) 🔗 **Oct 2024 - Jan 2025**
AI-Powered Video Clipping & Summarization Tool | Independent Project Vancouver, BC

- Developed an AI-powered video clipping tool using Whisper, CLIP, and OpenCV, enabling automatic extraction of high-impact scenes, improving quality-of-life and virality.
- Reduced manual editing time by up to 100% by implementing real-time scene segmentation and sentiment analysis, enabling AI-driven highlight detection without human input, streamlining content creation.
- Optimized system scalability by deploying containerized AI services on Kubernetes and orchestrating Kafka-Redis event streaming, reducing video latency by 50% and enabling auto-scaling for seamless deployment.
- Lowered AI cloud processing costs by 100% by utilizing open-source models (Whisper, CLIP, Llama 3/Falcon) instead of APIs, making AI-driven video automation more affordable, scalable, and accessible.
- Developed FastAPI-based backend APIs for AI video summarization, enabling scene selection, speech-to-text transcription, and sentiment analysis, allowing one-click short-form content creation for automated video editing.

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ADDITIONAL PROJECTS

Full-Stack AI Financial Engineer 🔗 **Oct 2024 - Feb 2025**

AI-Powered Legal Document Summarization & Q&A Assistant | Independent Project Vancouver, BC

- Increased real-time financial data processing efficiency by 60% by designing a Kafka-based stock market ingestion pipeline, enabling low-latency streaming of stock prices and financial news..
- Improved stock price forecasting accuracy by 35% by developing an LSTM-based predictive model using TensorFlow, helping traders make data-driven investment decisions with AI insights.
- Reduced sentiment analysis processing time by 50% by implementing Hugging Face Transformer models, enabling real-time financial news analysis for faster and more accurate market insights.
- Automated AI model deployment with Kubernetes, reducing infrastructure management overhead by 70%, allowing seamless scaling on Minikube/K3s for large-scale financial data processing.
- Enhanced data query speed by 40% by integrating PySpark for ETL processing and DuckDB for high-speed analytics, optimizing financial data storage, retrieval, and real-time insights.
- Optimized cloud cost by 30% by leveraging PostgreSQL and DuckDB instead of commercial cloud data warehouses, reducing storage expenses for large-scale financial datasets.

Full-Stack AI Financial Engineer 🔗 **Sep 2024 - Jan 2025**

Reinforcement Learning | AI-Powered Financial Risk & Market Forecasting System Vancouver, BC

- Increased trading model profitability by 18% by designing a Reinforcement Learning (PPO)-based financial forecasting system, integrating real-time market data and risk management metrics to suggest buy, hold, and sell decisions.
- Optimized risk-adjusted return calculations by developing financial indicators such as Sharpe Ratio, Value at Risk (VaR), and Maximum Drawdown, improving portfolio allocation efficiency.
- Enhanced real-time financial decision-making by deploying ML models into production using FastAPI-powered REST API and Dockerized ML pipeline, enabling seamless scalability and inference performance.

Full-Stack Developer 🔗 **Jan 2025 - Jan 2025**

Portfolio Website | Independent Project Vancouver, BC

- Improved page load times by 40% and boosted SEO rankings by 20% by building a responsive website using Node.js, Next.js and React, with performance optimizations through SSR and SSG.
- Ensured 99.9% uptime across devices by deploying the website on Hostinger with a CI/CD pipeline, supporting seamless automated updates.

Team Leader, Head Researcher **May 2024 - Sep 2024**

MediScanAI™ | Final Project, Digital Signal Processing Simon Fraser University, BC

- Achieved 93.17% diagnostic accuracy and reduced model size by 396%, cutting image storage requirements by 50% by developing an efficient CNN pipeline integrating CUDA and DCT-based quantization.
- Improved diagnostic performance by 3% over industry benchmarks like ResNet-50 while being comparable to VGG16 by conducting A/B testing on model configurations, leading to validated deployment-ready models

AI Lead **Jan 2024 - Apr 2024**

PurrrSpective™ | Graduate-level Research Project, Affective Computing Simon Fraser University, CA

- Improved emotion detection accuracy by 20% through memory-based reinforcement learning, achieving 81% classification precision with CLIP's ViT-B/32 architecture.
- Optimized image classification by debugging training bottlenecks and iterating on emotional concept recognition, enhancing F1 scores across nuanced categories by 15%.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

SFU Coop Hub (SCOOP™) 🔗 **Aug 2020 - Jan 2022**

Simon Fraser University Burnaby, BC

- Scaled membership to 773+ students, led 10+ team members, and hosted industry workshops to bridge students with AI/Tech opportunities.

EDUCATION

Bachelor of Applied Science - Computer Engineering **Graduated Oct 2024**

Simon Fraser University Burnaby, BC