

# Houfu Chen

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## Summary

- Machine Learning Engineer with teaching experience in AI and Python, plus extensive QA background in performance testing, automation, and network diagnostics.
- Skilled in multiple cross-platform testing methodologies including BDD/TDD, performance testing & regression testing.
- Recognized as Featured Alumni in UofT's Master of Engineering - ML & Analytics Emphasis program (reference).

## Work Experience

<b>Teaching Assistant (Machine Learning &amp; Python)</b> <i>University of Toronto</i>	01/2024 – Present <i>Toronto, ON</i>
<ul style="list-style-type: none"><li>- Design and implement ML pipelines covering Feature Engineering, Advanced Analytics, K-Means, KNN, SVD, PCA, and Neural Networks.</li><li>- Evaluate and optimize machine learning models to ensure optimal performance and scalability.</li><li>- Mentored and provided guidance for students on ML concepts and techniques, demonstrating patience and clear communication of complex technical material.</li></ul>	
<b>WiFi Software Testing Engineer</b> <i>Ford Motor Company Of Canada Limited</i>	05/2022 - 08/2022 <i>Oakville, ON</i>
<ul style="list-style-type: none"><li>- Used iperf to test ECU components (SYNC and TCU) on performance across multiple protocols (TCP/UDP/FTP/HTTP), scenarios, frequencies (5G/2.4G), and security levels (open/wpa2).</li><li>- Fixed 40+ SSH exception issues by updating Ubuntu and iperf versions, modifying WLAN commands (removed -w and -P options for normal execution).</li><li>- Fixed several Selenium exception errors by updating the ChromeDriver version on testing laptops.</li><li>- Developed comprehensive documentation on Ubuntu operation, iperf3 testing procedures, and troubleshooting guides for SSH and Selenium exceptions for future testers.</li></ul>	
<b>QA Developer</b> <i>Imagine Communications</i>	01/2021 - 04/2021 <i>Waterloo, ON</i>
<ul style="list-style-type: none"><li>- Writing daily tests to notify the team of daily server status, retrieving using CSS element locations.</li><li>- Ensured disabled elements are hidden from users.</li></ul>	
<b>QA Automation Specialist</b> <i>Teranet Inc.</i>	09/2020 - 12/2020 <i>Mississauga, ON</i>
<ul style="list-style-type: none"><li>- Wrote regression tests with C# under Selenium framework to improve system reliability.</li><li>- Optimized test execution time and technical health.</li></ul>	
<b>Software QA Engineer</b> <i>Manulife</i>	01/2020 - 04/2020 <i>Waterloo, ON</i>
<ul style="list-style-type: none"><li>- Developed BDD and TDD test scenarios for cross-browser compatibility, resolving 9 IE-specific defects.</li><li>- Fixed 40+ SonarQube issues achieving 98%+ test coverage, reducing production defects by 15%.</li></ul>	

## Projects

<b>FoodRacoon – Public ML-Powered Restaurant Recommender [Live Deployment]</b> <i>LLM + MLOps Deployment; Machine Learning Engineer</i>	04/2025 <i>GitHub</i>
<ul style="list-style-type: none"><li>- Developed &amp; deployed a user-facing ML tool it interprets natural food cravings thought processes into restaurant recommendations using GPT-4.</li><li>- Integrated Yelp and Google Maps APIs to generate and rank real-time location-based recommendations.</li><li>- Built customizable ranking system allowing users to adjust weights (rating, price, reviews) in advanced mode.</li><li>- Implemented complete backend with AWS Lambda, API Gateway, and OpenAI integration; deployed fully serverlessly.</li></ul>	
<b>AI Emotion Analysis System for People in Videos</b> <i>MLOps Implementation; Associate Machine Learning Engineer</i>	03/2025 <i>GitHub</i>
<ul style="list-style-type: none"><li>- Innovated end-to-end ML pipeline for facial analysis using DeepFace and MediaPipe with automated deployment.</li><li>- Created &amp; deployed model endpoints for consistent contextual scene analysis and emotion correlation with high accuracy.</li><li>- Implemented ML model monitoring and versioning system with real-time performance metrics.</li></ul>	
<b>Emergency Route Planner Framework</b> <i>ML Pipeline Development; Machine Learning Engineer</i>	09/2024 – Present <i>Toronto, ON</i>
<ul style="list-style-type: none"><li>- Built production-ready evacuation routing system using ML algorithms and LLM-based decision-making.</li><li>- Implemented ML infrastructure with agent-based simulations (OctoTools) and optimization tools.</li><li>- Developed CI/CD pipeline for continuous model improvement and deployment.</li></ul>	
<b>Other ML Personal Projects</b> <i>MLOps and Model Deployment; Machine Learning Engineer</i>	2024 - 2025 <i>GitHub</i>
<ul style="list-style-type: none"><li>- Reinforcement Learning (2024): Designed and deployed RL agent with monitoring and performance metrics.</li><li>- Financial Tool (2024): Built and operationalized LLM-powered financial service analysis tool.</li></ul>	

## Skills

<b>Programming Languages:</b> Python, SQL, C/C++, C#, JavaScript
<b>Testing &amp; QA:</b> Selenium, iperf3, Charles Proxy, BDD/TDD, Performance Testing, SonarQube, API Testing
<b>ML/AI:</b> TensorFlow, PyTorch, Scikit-learn, LLMs, DeepFace, Feature Engineering, Neural Networks
<b>DevOps &amp; Infrastructure:</b> AWS Lambda, API Gateway, Git, Docker, Kubernetes, Linux/Ubuntu, Azure, TCP/IP Networking
<b>Data Engineering:</b> Pandas, NumPy, Model Monitoring, Data Visualization

## Education

<b>University of Toronto (Graduated in 03/2025)</b>	Master of Engineering in Electrical & Computer Engineering
<b>University of Waterloo (Graduated in 06/2023)</b>	Bachelor of Applied Science in Nanotechnology Engineering

## Certifications

<b>Stanford Algorithm &amp; Data Structures Certification (01/2025)</b>
<b>Stanford &amp; DeepLearning.AI - Machine Learning Specialization (03/2025)</b>
<b>University of California, Davis - SQL for Data Science(03/2025)</b>