

MOHAMMAD SALEH NIKOOPAYAN TAK

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PROFESSIONAL SUMMARY

PhD candidate (GPA 4.0/4.0) specializing in **machine learning**, predictive modeling, and agentic AI systems, with a track record of delivering end-to-end ML workflows from data acquisition and feature engineering to evaluation and deployment. Proven expertise in **deep learning**, **time-series forecasting**, and retrieval-augmented generation (RAG) pipelines. Seeking data science, ML, and AI internship (Summer 2026) and full-time (post-May 2027) roles. U.S. Permanent Resident — Work Authorized.

EDUCATION

New Jersey Institute of Technology, Newark, NJ — PhD, Urban Systems (Technology Track) Expected May 2027

Research: AI & Data Analytics for Human-Building Interactions | GPA: **4.0/4.0** | Coursework: Applied ML, Deep Learning, Data Mining, Big Data, Reinforcement Learning, NLP, AI

Clemson University, Clemson, SC — MS in Construction Science and Management August 2023

Sharif University of Technology, Tehran, Iran — BS in Civil Engineering February 2020

TECHNICAL SKILLS

Programming	Python, R, SQL, MATLAB
Libraries / Tools	NumPy, Pandas, Scikit-learn, TensorFlow, Keras, Keras Tuner, LlamaIndex, Agno, Git/GitHub, Docker
Cloud & Data Infra	AWS, Azure, Hadoop, Spark, PostgreSQL, MySQL, ETL, API Integration
Data Analysis	Predictive Modeling, Statistical Analysis, Feature Engineering, A/B Testing, Dimensionality Reduction, Tableau, PowerBI
Machine Learning	Supervised/Unsupervised Learning, Time-Series Forecasting, Deep Learning, Reinforcement Learning, Ensemble Methods, RAG, LLM Workflows, Model Deployment, Hyperparameter Tuning

PROFESSIONAL EXPERIENCE

Kashmir World Foundation (KwF) — Remote | Data Science & AI Intern Dec 2025 – Present

- Engineered an autonomous **multi-agent system** (Python, Agno SDK) for talent acquisition, integrating LLMs via OpenRouter and Google Workspace APIs.
- Implemented **Retrieval-Augmented Generation (RAG)** with ChromaDB to parse PDF resumes, converting unstructured text into structured JSON via LLM-based extraction.
- Researched transfer learning to detect distress signals in sentinel species, training Core ML models on human acoustic features for edge deployment.

New Jersey Institute of Technology, Newark, NJ | Graduate Research Assistant Sep 2023 – Present

- Lead NSF I-Corps **SmartComfort** startup, applying ML, deep learning, and reinforcement learning to sensor data to optimize energy efficiency and thermal comfort.
- Built reproducible **data pipelines** (cleaning, preprocessing, feature extraction, validation) and deployed forecasting models to production-like environments with drift monitoring.
- Mentored ~50 students in MATLAB for numerical computing and engineering problem-solving.

Clemson University, Clemson, SC | Graduate Research Assistant Aug 2021 – Aug 2023

- Applied clustering algorithms to analyze COVID-19 citation networks; analyzed cleanroom air quality data using statistical methods; authored peer-reviewed publications.

Greenville County Schools, Energy Mgmt., Greenville, SC | Energy Efficiency Intern Jun – Aug 2022

- Conducted data-driven energy audits for 60 schools; analyzed HVAC performance data (humidity, temperature, ventilation) to identify inefficiencies and achieve cost savings.

PROJECTS

Risk-Aware Building Control with Quantile Patch Transformers (QR-PatchTST)

- Built a probabilistic short-term load forecasting model (Q10/Q50/Q90) using QR-PatchTST on CU-BEMS data; achieved PICP of 83.26% and median MAE of 24.06 kWh.
- Designed a **risk-aware supervisory controller** acting on Q90 upper bound, reducing critical missed peaks by **73.3%** versus a deterministic baseline; submitted to CI & CRC 2026.

End-to-End Deep Learning Pipeline for Smart-Building Power Data

- Engineered a multi-model pipeline (LSTM, CNN-LSTM, Transformer) on 700k+ observations with temporal feature engineering; achieved **R² of 0.986** via Bayesian tuning (Keras Tuner).
- Applied transfer learning to a new environment, improving RMSE by over **72%**; implemented multi-horizon forecasting (up to 24h) and unsupervised anomaly detection.

Indoor Thermal Comfort Prediction | Concrete Compressive Strength Modeling

- XGBoost models on 100,000+ ASHRAE records achieved **84.5% test accuracy** (50%+ over PMV baseline); manuscript submitted to *Journal of Energy and Buildings*.
- Random Forest, Gradient Boosting, and Neural Network models on 1,030 samples achieved R² of 0.92; published in *Infrastructures (MDPI)*, 2025.

AWARDS, HONORS & ACTIVITIES

- NSF I-Corps Grant (\$53,000)**, Entrepreneurial Lead, SmartComfort Startup, NJIT (2025) | **New Business Model Competition Winner (\$3,000)**, NJIT (2025)
- Best Intern Award (first recipient)**, Greenville County School District (2022) | **Sigma Lambda Chi Honor Society**, Clemson University (2022)
- Journal Reviewer**: Engineering Applications of AI, Neural Networks, Expert Systems with Applications (Sep 2024 – Present) | **Conference Presentations**: CI&CRC, ASES Solar, HCI International (Mar – Jul 2024)