

## EDUCATION

### Politecnico di Torino

*ICT for Smart Societies*

### Master's Degree

*Sept. 2019 – Oct. 2022*

### Southwest University

*Electronic Science and Technology*

### Bachelor's Degree

*Sept. 2013 – Jun. 2017*

## PUBLICATIONS

**Comparative Analysis of Neural Networks Techniques to Forecast Airfare Prices** *COMPSAC 2023*

**An Improved Seq2Seq-based Car-Following Model for Connected Automated Vehicles Considering Multi-Vehicle Information Topology** *TRB Annual Meeting 2023*

## PATENTS

**A Sliding Adsorption Cleaning Device for Glass Surfaces, CN204562022U** *2015*

**A Method of Small Particle Crop Drying Control, CN105605906A** *2016*

## AWARDS

### Scholarships

- University Scholarship *Jun. 2014*
- National Inspirational Scholarship *Jun. 2015*
- National Scholarship *Jun. 2016*

### Technology Innovation

- Grand Prize, The Second Mobile Robot Contest, Science and Technology Committee *May. 2015*
- Successful Entry Prize, Chongqing Board of Education *Jun. 2015*
- National Undergraduate Innovation and Entrepreneurship Training Program *Dec. 2015*
- Meritorious Winner, International Interdisciplinary Contest In Modeling (ICM) *Feb. 2016*
- Second Prize at Southwest University, Research on a Serpentine Robot Device *Jul. 2016*

## WORK EXPERIENCE

### Syncroweb Srl.

*Software Engineer Intern*

*Feb. 2023 – May. 2023*

- Design, develop, and test the Android applications using Kotlin programming language.
- Integrate the applications with the company's back-end systems.

### Shenyang Automation Research Institute (Kunshan) Intelligent Equipment Research Institute

*Robotics Engineer*

*Oct. 2017 – Aug. 2019*

- Research and development of industrial robots for sorting, and service robots for retail.
- Implemented SLAM, object detection, and pose estimation algorithms and integrated them with ROS.
- Implemented several functions like human-robot interaction display and voice prompts.
- PCB design, Modbus communication debugging, and software functional testing.

## PROJECT EXPERIENCE

**Master Thesis: Machine Learning Methodologies for Airfare Prediction** *Dec. 2021 - Jun. 2022*

- Compared traditional methods (Ridge Regression, KNN, Random Forest) with deep learning techniques (FCN, CNN, Transformer) for airfare prediction.
- Introduced a Bayesian neural network method for airfare prediction, demonstrating superior performance over other machine learning methods on a dataset of 10,683 domestic routes in India.
- Lead to a **publication** in International Computer Software and Applications Conference (COMPSAC 2023).

## Smart Gas Valve Control System

Oct. 2019 - Feb. 2020

- Designed and created a smart gas valve system to enhance kitchen safety during cooking.
- Utilized microservices architecture for efficient system functionality: Home Catalog: Registers and manages devices within the system.
- Gas Control: Analyzes sensor data and controls gas valves accordingly.
- ThingSpeak: Visualizes sensor data for easy monitoring and analysis.
- Node-Red: Provides a user-friendly interface for both local and remote control.
- Telegram Bot: Receives alerts and enables remote control of valves for user convenience.

## Regression on Parkinsons Telemonitoring Dataset

Dec. 2019 - Apr. 2020

- Implemented different methods (Linear Least-Squares Regression, Ridge Regression, Adam Optimizer, Conjugate Gradient Descent) for total UPDRS scores prediction.
- Evaluated and compared the methods' performance on Parkinson's disease research.

## Image Analysis for Melanoma Diagnosis

Jan. 2020 - Jun. 2020

- Melanoma Diagnosis Algorithm: Developed algorithm extracts borders and assesses asymmetry.
- Experimental Validation: Evaluated algorithm on mole dataset, demonstrating effectiveness in diagnosis.

## Big Data for Internet Applications

Oct. 2020 - Feb. 2021

- Apache Spark, HDFS, RDD, Spark SQL, DataFrame, Machine Learning with Spark MLlib, Graph analytics with Spark GraphFrames

## Forecast of Home Energy Consumption

Jan. 2021 - May. 2021

- Developed and applied advanced forecasting models including Prophet, LSTM, Hidden Markov model, and Regression neural network.
- Analyzed and adjusted home energy consumption patterns based on climate-driven variations in heating, cooling, and ventilation schedules.
- Implemented these models to predict and optimize energy usage, ensuring efficient and sustainable home energy management.

## ARIMA Models for Car Sharing Prediction

Mar. 2021 - Jul. 2021

- Utilized MongoDB for data storage.
- Explored and tuned ARIMA model parameters (p, d, q).
- Analyzed training window size (N) and policies (expanding/sliding).

## Modeling Propagation with Agent-Based Models for COVID-19 Diffusion

May. 2021 - Nov. 2021

- Trained model with historical epidemic data.
- Identified key parameters for future trend estimation.
- Analyzed policy impacts to enhance predictive accuracy.

## Bachelor Thesis: A Method of Small Particle Crop Drying Control

Jan. 2016 - June. 2017

- Smart Small Grain Crop Drying System: Central control unit: STM32F103RBT6; Manages motor, fan, and heating tube.
- Customizable Drying Parameters: Regulates temperature, and drying time; Tailored for different crop types.
- Efficient and Energy-Saving: Ensures efficient, high-quality drying; Optimizes energy consumption.
- Lead to a **patent** with number CN105605906A.

## The Design of a Small Intelligent Spraying Device for Wall Surface

Mar. 2014 - Jan. 2015

- Innovative Wall-Spraying Equipment: Features double suction cups for stability; Controlled by MC9SXS128, ensuring precision.
- User-Friendly Interface and Control: Allows route planning and autonomous operation; Enables smartphone connectivity for remote control.
- Lead to a **patent** with number CN204562022U.

---

## LANGUAGES

Chinese: Native

English: C1

German: A1

Italian: A1