

Junjie Zhang



🏠 Yuxi Rd. 11th 3-219, 101318, Shunyi, Beijing

☎ (+86)18811797210

✉ andyzhang0115@outlook.com

Education

China Agriculture University	Bachelor of Science	2013.09-2017.07
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Vehicle engineering Automobile electronic technology

- **Relevant courses:** Microcontroller System Design in automobile
Vehicle Construction and Vehicle Dynamics

University of Kassel	2018.10-2019.06
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- German CEFR B1-C1 and DSH preparation courses

Technical University of Braunschweig	Master of Science	2019.10-2022.11
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Electric vehicle Electric and electronic system

- **Relevant courses:** Power electronics/ electric motor/ battery system/
machine learning/ ADAS

Work experience

Li Auto Inc.	Quality System Engineer	2023.06-2023.11
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- Fully responsible for the accurate traceability of components for Li Auto's 6 new models, including demand input, implementation at the R&D, supply chain and manufacturing ends. Problems solving and promote systemic needs.
- The ESO/PPAP deliverable review of components, discovers problems at the process system level, promotes 100% resolution of the problems, and optimizes and iterates the R&D and supply chain process systems.
- Construction of Li Auto's NEV safety system and identification and resolution of internal audit issues. A round of bottom-up review and a round of internal review have been completed.
- Fully responsible for Li Auto's blue-collar "monthly quality pacesetter", coordinating 17 departments to complete relevant monthly tasks on time, including case collection, preliminary evaluation, final evaluation and bonus entry.
- Fully responsible for the "System Audit Tickets" system, responsible for system audit problem data analysis, monthly problem report release, and problem point docking with system interfaces in different departments of the company.
- Partly responsible for the CCC audit of Li Auto. Participated in the CCC access audit of Li Auto's Beijing manufacturing base in September.
- Host department meetings and ESO/PPAP review meetings.
- Responsible for the internal and external audits of Li Auto's quality system, such as: IATF16949 and VDA6.3.

Cognizant Mobility	Test Engineer	2023.11-present
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- Resident Engineer at BMW Beijing R&D Center, fully responsible for LABCAR testing and validation of MINI-Spotlight in automotive environment with E/E architecture

development tools and system test tools based on input from the development.

- Responsible for testing the whole vehicle E/E system integration related to CAN bus, FlexRay, Ethernet. Including basic communication functions (bus load, bus logic, SecOC), all ECUs' diagnostic functions, user-oriented condition-based service, AUTOSAR-based vehicle status management, function of ECU software flashing.
- Responsible for the analysis and providing solutions of abnormal status and potential defect reporting during the testing process, defect pre-analysis based on traces files to provide support for the development team from BMW, third parties and vendors in China or Germany to quickly locate the problem. Ensure that all identified issues are effectively resolved and can be re-validated.
- Maintenance of the Test Bench and test tool chains. E.g. regularly/unregularly updating software of ECUs, modifying automation test related script, hardware changing before product update, developing tools that enhance productivity for testing and analysis.
- Assist with other tasks within the domain, such as teaching newcomers about job-related technologies.
- Troubleshooting and problem-solving tasks from other test domains.

Master's Project expertise

Master Thesis	2022.04-2022.10
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Investigating the accuracy of Convolutional Neural Networks for approximating the curvatures of phase boundaries in multiphase flows.

- Modelling on the results from the scientific literature of feedforward neural networks based on Tensorflow and other machine learning and optimisation libraries.
- Design and modelling of a convolutional neural network to process the same data set
- A detailed analysis of the similarities and differences between convolutional neural networks and numerical computing methods.
- Development of a possible concept for direct computation of numerical derivatives (e.g. temperature gradients) in materials using neural networks and potential applications in battery stability testing.

Solve PDEs based on a physical informed neural network	2021.11-2022.02
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- Programming with Python to build a neural network containing physical information to solve the Laplace equation of the round with Dirichlet boundary conditions.
- Using the other common libraries in machine learning e.g. Tensorflow, Matplotlib, Numpy, Scikit-learn.

Silicon-based miniature pressure sensor system	2021.01-2021.03
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- Created a microsensor membrane structure model and performed finite element stress analysis using Solid Works.
- Built a simulation circuit using Spice and improved the circuit based on simulation results.
- Designed a double-layer PCB board using EAGLE and produced a physical sensor for testing and analysis of key indicators.

Modelling and analysis of electric powertrain based on Simulink	2020.09-2020.11
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- Visualized motor characteristic parameter data using MATLAB scripts.
- Calculated longitudinal dynamics of the model car under front-wheel and rear-wheel drive conditions.
- Developed a simulation system of the model car powertrain using Simulink, including subsystems such as wheels, differential, two-speed reducers, motor, battery pack, and other electrical devices.

Undergraduate Project expertise

Bachelor's Thesis	2016.12-2017.06
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ITES of Corn Combine Reaping both Corn Stalk and Spike

- Developed an embedded system based on STM32 and CAN bus to achieve intelligent control of a combined harvester.
- Designed hardware circuits using Altium Design, including the controller subsystem, bus controller transceiver subsystem, low-voltage power system, and PWM system.
- Wrote C control programs based on PWM and constructed the control logic.

XYZ three-axis accelerometer measuring system	2016.03-2016.05
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- Participated in a microcontroller application and design course project.
- Responsible for designing the hardware circuit, completing code debugging and modification tasks on the experimental platform, as well as writing reports.

Automatic charging pile for Park Lift	2015.10-2016.03
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- Contributed to a technological innovation project that developed an automatic billing function for an electric vehicle charging pile.
- Conducted research on the status of park lifts in Beijing and designed hydraulic systems and control circuits.

IT skills:

- Well-versed in CANoe, MATLAB, Simulink, PROTEL, LTSpice, CAD, and Microsoft.
- Well-versed in BMW's toolchain for E/E automation tests (ECU-TEST, CARMEN)
- Expert Knowledge of Python, familiar with C/C++, CAPL
- Expertise in Photoshop and digital image processing

Other:

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| • Foreign language: | English fluent (CET-4/CET-6, IELTS: 6.0)
German business fluent (DSH2) |
| • Student association: | University Wind Orchestra of CAU |
| • Extramural: | Signed photographer of Getty Image (US)
Signed photographer by Nikon (CN) |
| • General Certificate: | C1 drive licence |
| • Interest: | Outdoor activity, Amateur astronomy |