

EDUCATION

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- **(Top 50) Monash University** Melbourne, Australia  
*PhD Candidate (Supervised by Prof. Aldeida Aleti, Prof. Chunyang Chen, Prof. Hongyu Zhang)* Oct. 2022 – Present
  - **Visiting Scholar:** NLP Lab @ Tsinghua University (Oct. 2024 – Jun. 2025)
  - **Visiting Scholar:** SE&AI Lab @ Technical University of Munich (Jun. 2025 – Aug. 2025)
  - **Research Intern:** Fermat Lab @ Huawei Hong Kong Research Center (Sept. 2025 – Present)
- **(Top 100) University of Zurich** Zurich, Switzerland  
*PhD Candidate (Supervised by Prof. Harald C. Gall)* Sept. 2020 – Sept. 2022
- **(Top 100) KTH Royal Institute of Technology** Stockholm, Sweden  
*Master's Degree in Machine Learning (Thesis Supervisor: Prof. Martin Monperrus)* Aug. 2018 – Aug. 2020
- **(Project 985) Shandong University (the Elite Class)** Jinan, China  
*Bachelor's Degree in Computer Science (Thesis Supervisor: Prof. Jun Ma)* Sept. 2012 – Jun. 2016

SELECTED PAPERS

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- **Beyond Neural Incompatibility: Easing Cross-Scale Knowledge Transfer in Large Language Models through Latent Semantic Alignment**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* Under Review
- **Semantic-based Optimization for Repairing LLMs: Case Study on Code Generation**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* ICSE'26 @ Rio de Janeiro
- **Semantic-Aware Layer-Freezing for Computation-Efficient Fine-Tuning of LMs**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* ACL'25 @ Vienna
- **Vocabulary-Defined Semantics: Latent Space Clustering for Beyond-Context Learning**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* Under Review
- **Focus-aware Neurons: Robust LM Repair leveraging Selective Attention**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* Under Review
- **Neuron Patching: Semantic-based Neuron-level LM Repair for Code Generation**  
*Jian Gu, Aldeida Aleti, Chunyang Chen, Hongyu Zhang* TOSEM (2026)
- **Towards Top-Down Automated Development in Limited Scopes: A Neuro-Symbolic Framework from Expressibles to Executables**  
*Jian Gu, Harald C. Gall* FSE'23 @ San Francisco
- **Assemble Foundation Models for Automatic Code Summarization**  
*Jian Gu, Pasquale Salza, Harald C. Gall* SANER'22 @ Hawaii
- **Multimodal Representation for Neural Code Search**  
*Jian Gu, Zimin Chen, Martin Monperrus* ICSME'21 @ Luxembourg
- **On the Effectiveness of Transfer Learning for Code Search**  
*Pasquale Salza, Christoph Schwizer, Jian Gu, Harald C. Gall* TSE (2022)
- **Automated Classification of Overfitting Patches with Statically Extracted Code Features**  
*He Ye, Jian Gu, Matias Martinez, Thomas Durieux, Martin Monperrus* TSE (2021)

## WORK EXPERIENCE

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- **Huawei Hong Kong Research Center** Hong Kong, China  
*Research Intern* Sept. 2025 – Present
  - **Byte-Level LM Encoder**: It is about bit-stream recognition, serving for performance analysis in Harmony OS.
  - **Byte-Level LM Decoder**: It is an early-stage exploration on byte-level LM training, mainly about coding tasks.
- **Monash University** Melbourne, Australia  
*Teaching Assistant* Jul. 2023 – Jul. 2024
  - **Lab Tutoring (1 semester)**: FIT5003 Software Security.
  - **Co-Supervisor (2 semesters)**: FIT4701/FIT4702 Final-year Project; Honours Project and Research Thesis.
- **University of Zurich** Zurich, Switzerland  
*Research Assistant* Sep. 2020 – Sep. 2022
  - **Course and Seminar**: In charge of Q&A, reviewing assignments and the exam content, and scoring projects.
  - **AI for Pair Programming**: Designed and guided a Master's project on code intelligence (retrieval, generation).
- **KTH Royal Institute of Technology** Stockholm, Sweden  
*Research Engineer* Jun. 2019 – Aug. 2019
  - **Repairnator**: Integrated Coming and SequenceR into Repairnator for overfitting ranking to enhance the repairing ability. Repairnator is an influential software for automated program repair. Implemented its official GitHub app.
  - **Coming & DSpot**: Integrated Prophet4J and Sketch4Repair into Coming to capture code features, and integrated Context2Name into DSpot to prettify the generated test cases. Coming is a tool for mining git repositories and DSpot is a tool for generating missing assertions in JUnit tests.
  - **Prophet4J**: Implemented Prophet4J, a patch evaluation tool inspired by Prophet but for Java software ecosystem. Prophet is a automatic patch-generation system by learning the correct code samples.
- **Smart Software Studio** Yancheng, China  
*Software Engineer* Jul. 2017 – Jun. 2018
  - **YoYo**: Delivered a technical solution including websites and apps for online community, with the supports for local advertisements. It is for identity-based social, such as communications between alumni or neighboring people.
  - **WiiPM**: Developed a 2D rogue-like game on the mobile platform. WiiPM contains elements of turn-based battles as well as collection and role-plays adventure. The technique of procedural content generation is adopted.
  - **BAMI**: Translated a living book named “Biological and Machine Intelligence”, which is authored by Numenta Inc. It continuously documents a novel theoretical framework on both biological and machine intelligence.
- **UCar Inc.** Beijing, China  
*Software Engineer* Mar. 2016 – Nov. 2016
  - **Anti-Fraud / Anomaly Detection**: Analyzed unusual operation logs and GPS records, summarized common patterns of anomaly patterns, to help punish promotion abuse activities.
  - **Java EE Development**: Implemented some functional modules in internal business platform.
  - **Streaming Data Pipeline**: Maintained the streaming pipeline for real-time transaction data.
- **Hisense Group (R&D Center)** Qingdao, China  
*Algorithm Intern* Sep. 2015 – Feb. 2016
  - **Recommendations**: Improved online recommender systems (itemCF and content-based). Extracted plot tags and review tags to build movie knowledge graph. Designed unified knowledge base to fuse multiple data providers.
  - **GenePool**: Developed one workflow system collecting and processing movie metadata as well as one corresponding recommender system for demonstration.

## SERVICES

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- **SE Conferences & Journals (TSE, TOSEM, etc)** Reviewer
- **AI Conferences & Journals (AAAI, TAI, etc)** Reviewer

## GRANTS

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- **\$60K (1500 kSU) Research Grant** AU National Computational Infrastructure 2024 – 2025
- **\$30K HPC Research Grant** DUG Technology Ltd 2023 – 2024