Guofei CHEN

(+86) 198-8316-3203 gfchen@zju.edu.cn Personal Website
Zheda Rd. 38, Xihu District, Hangzhou, 310000, China

EDUCATION

Zhejiang University, Hangzhou, China *Sep 2019 - Jul 2023*
Bachelor of Science in Automation **GPA: 3.95/4.0 (10%)**
CKC Honors College - Mixed Class **5% (in 3000)**

PUBLICATIONS AND MANUSCRIPTS

PUBLICATIONS

1. **Zhichao Chen, Luyao Wang, Guofei Chen, Zhiqiang Ge. Probabilistic Generative Model with Long-Term Memory and its Application in Chemical Process Modeling.** ***International Symposium on Process Systems Engineering (PSE).*** **2021. [paper][ppt]**

EXPERIENCE

Relative Localization in Swarm Based using Range-measurements **June 2022 - Present**
FAST Lab, Zhejiang University
Advisor: Prof. Fei Gao

- **Proposed a Vision-Inertial-UWB tightly coupled state-estimator for swarm-system, the first estimator that use a single frame of UWB observation to estimate the relative pose. Deployed multiple UWB tags on one agent and modelled the noise of UWB using Gaussian process.**

RoboCup Small Sized League Team - ZJUNlict **June 2020 - July 2022**
State Key Laboratory of Industrial Control, Zhejiang University
Advisor: Prof. Rong Xiong, Dr. Zheyuan Huang

- **Proposed a mapping and planning method that decreased the time spent on planning module (compared to RRT*: decreased by 5 times). Leveraged the features of the competition to build map and designed an efficient recursive path searching method. [illustration]**
- **Led the team on multi-robot defense and kick module, including improving architect, maintenance and responsive changes in matches. Reviewed more than 10,000 lines of code. Together we were awarded the champion of 2022 Zhejiang Province Robot competition and 2022 RoboCup China-Open. [video]**

Soft Sensor based on Bayesian Inference **Mar 2021 - June 2022**
State Key Laboratory of Industrial Control, Zhejiang University
Advisor: Prof. Zhiqiang Ge, Dr. Zhichao Chen

- **Suggested two novel structure of neural network for soft sensor, a state estimator of process engineering, using Bayesian inference.**
- **Proposed a new method using Gumbel-Softmax reparameterization in Gaussian Mixture Variational Autoencoder for multi-mode information mixture. The new GM-VAE out-performs several state-of-art Auto-Encoders on datasets from real chemical processes.[code] [illustration]**

- **Proposed and implemented a light-weight dynamic long-term memory probabilistic generative model (LTM-PGM). Assumed the Markov property of latent variables, used GRU cells to generate latent space, and gated residual mechanism to estimate the transformation of latent space. LTM-PGM out-performs several state-of-art Auto Encoders and LSTM networks. Paper sumitted to PSE2021. [code][paper]**

PROJECTS

Vision-Based Electric Transformer Inspection System **Sept 2020 - Jan 2021**
College of Electric Engineering, Zhejiang University
Advisor: Prof. Jianliang Zhang

- **Built a pure vision-based inspector of electric transformers and working conditions, from the state of transformer(oil pressure, temperature, water vapour concentration) to workers behavior analysis.**
- **Modules include: Object detection recognition, Analog Instrumentation Reading Module, Worker behavior detection. [code][ppt]**

TinySQL - A Relational Database **Mar 2022 - Jun 2022**
College of Computer Science, Zhejiang University
Adivisor: Prof. Yunjun Gao

- **Built a relational database from scratch (except for using a third-party SQL-Query-Parser engine) using C-plus-plus.**
- **Architect of the project. Team leader, code reviewer (6k+ lines of original code).**
- **Basic Feastures include: SELECT Query, DELETE Query, INSERT Query, DROP Query. Other features include: Nested SELECT Query, A simple Execution Optimizer, Outer Stored Index, etc. [code][ppt]**

SKILLS

Programming: C/C++, ROS, Python, JavaScript, Linux

Language: English (TOEFL: 109), Mandarin Chinese