Guangda Xu

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EDUCATION

Master of Science in Robotics   *Jan* 2023 – Present
National University of Singapore (NUS)
- GPA: 4.45/5
- Main Courses: Robot Vision and AI, Machine Learning in Robotics, Optimization Techniques for Dynamic Systems, Mathematics for Robotics Engineering, Dynamics and Control, etc.

Bachelor of Engineering in Civil Engineering   *Sep* 2018 – *Jun* 2022
Dalian University of Technology (DUT)
- Percentage: 88.8/100 (Academic Rank: 7/146)
- Graduation Project: The Design of Huachang High-rise Building in Dalian High-tech Industrial Zone (Grade: 93/100)

Exchange Program   *May* 2021 – *Aug* 2021
Osaka University
- Main Courses: Interactive Robots and Quantum Computing

PROJECTS

Vision and Machine Learning Project
Course: Robot Vision and AI   *Feb* 2023 – *May* 2023
- Processed images to separate different characters and established two classification systems (CNN and MLP) with MATLAB
- Contributions: performed image thresholding, segmentation, and labelling; trained and tested CNN and MLP models and achieved accuracies of 89% and 91%
- Project Report [PDF] Software [ZIP]

Pillow, Tesseract, and OpenCV Project
Course: Python 3 Programming (Coursera)   *May* 2023
- Wrote Python code to search through a series of newspapers looking for the occurrences of certain keywords and faces
- Code [HTML]

Python Programming Projects
Course: Python 3 Programming (Coursera)   *Apr* 2023 – *May* 2023
- Built a sentiment classifier to analyze a collection of Twitter data, by calculating emotional scores based on the presence of positive and negative words
- Developed a movie recommendation program that integrates data from two different APIs, enabling retrieval and sorting of related movies based on user ratings
- Implemented a simplified version of the game Wheel of Fortune, including classes of players (human and computer) and their corresponding actions

Comparison Between Two Selected Solvers for SDP or LMI
Course: Optimization Techniques for Dynamic Systems   *Feb* 2023 – *May* 2023
- Compared the operational efficiency of SeDuMi and SDPT3 regarding the stability of continuous-time linear systems with YALMIP (MATLAB toolbox)
- Project Report [PDF] [arXiv:2306.04531]

An Improved Scheme for Chess-Playing Robots

Course: Materials, Sensors, Actuators & Fabrication in Robotics   *Mar* 2023 – *May* 2023

- Proposed and demonstrated the feasibility of an improved scheme for cheaper and safer Human-Robot Interaction
- Contributions: searched and summarized related literature and proposed the basic plan
- Project Report [PDF]

Comparison of Euler-Maruyama and Milstein Methods for SDEs

Course: Mathematics for Robotics Engineering   *Mar* 2023 – *May* 2023

- Evaluated accuracies, time consumptions, and memory usages for different step sizes with two numerical methods for SDEs

Study of the Fujiang Bridge During the 2020 Sichuan Floods

Undergraduate Innovation and Entrepreneurship Training Program, DUT

Dec 2019 – *Apr* 2021

- Independently studied ANSYS and MATLAB to analyze the "Heavy Vehicle Pressure Beam" protection method by calculating the bearing capacity of the bridge pier
- Led group meetings and communicated with the instructor on behalf of the group

EXPERIENCE

Trainee, The Development and Reform Bureau of Tuquan County   *Aug* 2022 – *Dec* 2022
- Managed the personnel health code database within the jurisdiction of the department
- Sent isolation notice and provided consultation on COVID-19 prevention policies

Trainee, China Construction Eighth Engineering Division Co., Ltd.   *Jun* 2021 – *Jul* 2021
- Created 2 structural drawings with AutoCAD and CASS
- Provided a sectional construction scheme as a reference for engineers
- Co-ordinated between the construction company and design institute

Volunteer, Jianshe Community, Inner Mongolia, China   *Feb* 2020
- Assisted in COVID-19 prevention work during a 14-day lockdown

Secretary, The Youth League Committee of DUT   *Sep* 2018 – *Jul* 2019
- Established a database using Microsoft Access to organize and classify the personal information of league members
- Participated in the process design or audio-visual control of over 5 large campus events, such as the Commemorative Conference of the 70th Anniversary Celebration of DUT

AWARDS & HONORS

The Learning Excellence Award (First Prize)   Dalian University of Technology
Mr. Su Junqian and Ms. Huang Yijiao Scholarship   Dalian University of Technology
The Learning Excellence Award (Second Prize)   Dalian University of Technology
The Third Prize in Dalian Mathematics Competition   Dalian Mathematics Society
The Third Prize in National English Competition for College Students   IATEFL·TEFL China
National Computer Rank Examination – Level 2 (C Programming)   MOE, China
Successful Participant in Interdisciplinary Contest in Modeling   COMAP

SKILLS & LANGUAGES

- Programming: Python, C, and MATLAB
- Design: AutoCAD, PKPM, CASS, and ANSYS
- Languages: Mandarin (native) and English (IELTS 7.5; R: 8.5, L: 8.0, W: 6.5, S: 6.0; Aug 2021)