europass

Chuanfang Ning

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WORK EXPERIENCE

University research assistant

BioRob and VITA lab @ EPFL [15/02/2022 – Current]

City: Laussane

Country: Switzerland

Deep learning method for mobile furniture skeleton localization

Supervisor: Prof. Auke Ijspeert, Prof. Alexandre Alahi, Dr. Anastasia Bolotnikova and Dr. Alessandro Crespi

- Extend the Omnibot baseline design to a swarm robotics framework.
- Transfer the OpenPifPaf skeleton detection model to furniture localization on Omnibots.
- Facilitate the furniture localization model with real and synthetic data collected from Omnibots.
- Improve the OpenPifPaf network structure based on the test performance.

University research assistant

BioRob and RRL @ EPFL [01/09/2021 – 15/01/2022]

City: Lausanne

Country: Switzerland

Omnibot: Mobile furniture baseline development

Supervisor: Prof. Auke Ijspeert, Dr. Anastasia Bolotnikova and Dr. Alessandro Crespi

- Designed and prototyped interchangeable mechanical connection for a mobile robot with furniture.
- Implemented multi-model teleoperation for sensors/actuators of the mobile robot with C in Arduino.
- Improved and validated the electronic circuit design for mobile furniture with a custom PCB board.
- Coded baseline for furniture localization, navigation, and interactive control (UI, voice, gesture).
- Developed an Android application for interactive furniture control with Android Studio in Java.

University research assistant

Ramdya Lab (Neuroengineering Laboratory) @ EPFL [15/09/2020 – 15/01/2021]

City: Lausanne

Country: Switzerland

Optobot: An automated system for optogenetic experimentation

Supervisor: Prof. Pavan Ramdya, Dr. Victor Lobato and Dr. Daniel Morales

- Improved the Optobot system mechanical and electronical design for accurate high-throughput biomedical experiments.
- Programmed motion control, user interface with C++ and experimental automation process control with Python.
- Analyzed fly locomotion and neuron activities recorded by the improved automated system with OpenCV and deep learning framework (LiftPose3D).

University research assistant
Institution for Applied Automation and Mechatronics (IaAM) [01/01/2020 – 10/06/2020]

City: Aachen
Country: Germany

AutoSynPose: Automatic 6D-pose detection dataset generation pipeline
Supervisor: Prof. Stephan Kallweit and Heiko Engemann

- Developed an automatic synthetic dataset generating pipeline with Unreal Engine 4 (paper). Generated a dataset with 6 Mio. subsegments for 5 YCB objects using 97 rendering locations in 12 different environments with domain randomization in lighting, color, texture, etc.
- Developed an automatic real-world dataset capturing pipeline with ROS on a UR5 robotic arm holding a camera mounted on a mobile platform. Generated a dataset with 3k subsegments.

University research assistant
Research Institution for Intelligent Autonomous Systems [14/12/2018 – 14/03/2019]

City: Shanghai
Country: China

Fischer Intelligent Factory 4.0
Supervisor: Prof. Nan Xie

- Implemented distributed control for Fischer multi-processing stations on SIEMENS PLC S-1500.
- Programed intelligent ware management, processing, and sorting pipeline with TIA Portal.
- Developed a human-model interface for the process control with SIEMENS Comfort Panel.
- Fused interactive control of industrial process with Virtual Reality gears.

EDUCATION AND TRAINING

MSc. in Robotics
EPFL [01/09/2020 – Current]

Address: Rte Cantonale, 1015 Lausanne
Field(s) of study: Mobile robots, Medical robots
Final grade : 5.64/6

Main emphasis: Robotic perception (vision or sensor-based), Mobile robots(swarm intelligence, navigation, planning, biped locomotion), Image processing, Machine learning, Deep learning, haptic interface, FPGA, Applied data analysis, neuro/bio-robotics

BEng. in Mechatronics
Tongji Unniversity [01/09/2016 – 01/07/2020]

Address: Siping Road 1239, 200070 Shanghai (China)
Field(s) of study: Mechatronic engineering
Final grade : 4.78/5

Main emphasis: Automatic control theory, electronic circuit design, software engineering, industrial automation, mechantronic systems

BEng. in Mechatronics
University of Applied Science Aachen [01/09/2019 – 01/07/2020]

Address: Bayernallee 11 , 52066 Aachen (Germany)
Field(s) of study: Mechatronic engineering
Final grade : 1.36/1

Double degree program
Main emphasis: Mechatronic & Embedded system, statistics and dataset for deep learning

LANGUAGE SKILLS

Mother tongue(s): **Chinese**

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

German

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

DIGITAL SKILLS

Programming

Python / C/C++ / Matlab / TensorFlow/Pytorch / Java / VHDL / PLC programming / Assembly

Designing and Mechanics

Inventor / CAD / CATIA / Adams / Solidworks

Electronics and Simulation

Multisim / Altium Designer / Simulink

Graphics and Vision

OpenCV / WebGL / OpenGL / UE4 / Blender