Peiyuan Liao (Alexander)

www.linkedin.com/in/peiyuan-liao

Email : liaop20@kent-school.edu
Mobile : +1-860-671-7892

Education

- **Kent School** — Kent, CT
  AP Calculus BC - 5, AP Computer Science A - 5, AP Chemistry - 5; GPA: 6.08 (out of 6) — *Aug 2016 – present*
  - **TOEFL: 116**: Reading: 30; Speaking: 26; Writing: 30; Listening: 30
- **Coursera** — Online
  Neural Networks and Deep Learning, Mathematics for Machine Learning: Multivariate Calculus
- **Carnegie Mellon University AP/EA** — Pittsburgh, PA
  15-122: Principles of Imperative Computation, A; 21-127: Concepts of Mathematics, A — *June 2018 – August 2018*

Research Experience

- **Co-Founder, Senior Researcher** — Kent, CT
  Kent Artificial Intelligence Laboratory (KAIL) — *April 2018 - present*
  - **Summary**: Cooperating with researchers from Berkeley Artificial Intelligence Research (BAIR) and Stanford Artificial Intelligence Laboratory (SAIL)
  - **Website**: https://github.com/Kent-AI-Laboratory
- **First Author** — Kent, CT
  Deep neural network based subspace learning of robotic manipulator workspace mapping — *Sept 2017 - Feb 2018*
  - **ICCAIRO 2018**: Paper accepted for presentation at ICCAIRO 2018 in Prague, Czech Republic, on May 19-21, 2018 (proceedings will be indexed in IEEE and ACM) and is invited to submit to SCI journals.
  - **Summary**: Using Subspace Learning to approximate the discretization method of workspace evaluation algorithm for serial-link manipulators.
  - **arXiv**: https://arxiv.org/abs/1804.08951
- **Patent Inventor (CN 201510502664.2)** — Beijing, China
  Rapid Prototyping for Microgravity Environment — *Jan 2015 - Nov 2015*
  - **Summary**: Modifying the structure of an μSL printer so that the feeding of material is done by negative pressure
- **Research Intern** — Beijing, China
  Institute of Chemistry, Chinese Academy of Sciences — *Summer 2017*
  - **Summary**: Environmental Chemistry; Determination of COD in waste water, determination of water hardness through EDTA titration
- **Research Intern** — Beijing, China
  Institute of Computing Technology, Chinese Academy of Science — *Summer 2017*
  - **Summary**: Robot Kinematics; Spatial pose transformation, manipulator forward and invserse kinematics, and joint space trajectory planning

Projects

- **Deep generative modeling for manipulator design**: Implementing the InfoGAN framework on 6-DOF spherical robotic manipulators to aid in dynamic structure design
- **PUMA560**: Interfacing with a PUMA (**P**rogrammable **U**niversal **M**achine for **A**ssembly) 560 in Kent Pre-Engineering Center and achieve trajectory planning and motion control through VAL II language

Awards

- **Top 4%, Kaggle TrackML particle tracking challenge**: Led a team that scored 0.66674/1 (Silver Medal, placed 21/656) in CERN's TrackML Particle Tracking Challenge.

Skills

- **Programming Languages**: MATLAB (proficient), Python (proficient),TEX (familiar), Java (familiar), C (familiar)
- **Platforms and Libraries**: Ubuntu, UNIX-like Shell, Git, PyTorch, Keras, Jekyll, Robotics Toolbox, LAMMPS
- **Fields of Interest**: Deep Learning, Generative Modeling, Artificial Intelligence, Computer Vision, Robotics
- **Languages**: English (bilingual), Chinese (bilingual), French (intermediate)