XINGYU (ALFRED) LIU

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EDUCATION

Carnegie Mellon University *Pittsburgh, PA*
Doctor of Philosophy in Materials Science & Engineering - GPA: 3.87/4.0 *Dec. 2021 (expected)*
Secondary Master of Science in Machine Learning – GPA: 3.67/4.0 *Dec. 2021 (expected)*

- EVP, Graduate Consulting Club – with logistics team of 4, facilitated Pittsburgh Innovation Case Competition; recruited 12 teams and 37 participants while partnering with 8 firms including BCG and McKinsey.

Master of Science in Materials Science & Engineering - GPA: 3.81/4.0 *Dec. 2017*

- Received M.S. Research Excellence Award (5% acceptance in department) for research on increasing performance of solar cells; performed first-of-its-kind calculation to study 500 atoms per cell.

Wuhan University of Technology *Wuhan, Hubei, P.R. China*
Bachelor of Science in Materials Science & Engineering - GPA: 91.11/100 *Jun. 2016*

- Awarded National Scholarship (2% receive).

PROFESSIONAL EXPERIENCE

Research Assistant, **Marom's Group, Carnegie Mellon University** *2018 - Present*

- Designed and implemented Materials Science and Machine Learning (MatML) workflow to initiate automated database screening and model training for candidate materials search.
  - Conducted qualitative research and literature review; confirmed most effective metric to narrow down small-gap candidate pool via Gaussian process regression, cut time cost by 90%.
  - Research led to successful proposal for project to be recognized as 1 of 10 Early Science Project being conducted at Argonne National Laboratory.
- Collaborated with Argonne and Intel to improved workflow performance via migrating workflow to GPU; suggested Python package to cut time cost by 70% and yielded highest accuracy better than state-of-the-art.
- Resulted in 2 first-author publications and 2 second-author publications that received 24 total citations (i.e., *Journal of Physics: Condensed Matter*, *The Journal of Physical Chemistry C*; impact factor: 4.2 – top 10%).

Research Assistant, **Cheng's Group, Wuhan University of Technology** *2015 - 2016*

- For research group focusing on developing fully printable solar cell, confirmed best ration of additive for light-absorbing layer precursor, increasing power conversion efficiency of a solar cell from 8% to 14%.
  - Research projected to disrupt market because manufacture process is fully printable and service lifecycle is increased.
- Resulted in 2nd-author publication in *RSC Advances* (impact factor: 3.07, top 15% in gen chem; 6 citations).

Head of Second Violin Group, **Wuhan University of Technology Symphony Orchestra** *2013 - 2015*

- Formed 1st symphony orchestra at university; pitched orchestra to Academic Affairs and secured $14K budget to recruit 70 members in the first 2 years.
- Organized weekly training; invited to play in art festival competition, placing 1st prize.

Carbonization Process R&D Intern, **Zhongfu Shenying Carbon Fiber Co., LTD.** *2015*

- Analyzed testing results of final carbon fiber products and drafted daily product quality reports for Head of Technology for top carbon fiber manufacturer in China.
- Proposed ceramic material replacement of baffle used in carbonization process to improve heat treatment.

LEADERSHIP EXPERIENCE

*Group Liaison***, Pittsburgh Quantum Institute (PQI)** *2020 - Present*

- Market accomplishments of Marom's Group via website and newsletter for 9 quantum science and engineering researchers in Pittsburgh.

SELECTED PRESENTATIONS

- GW goes large scale Workshop, Helsinki, Finland. Conference Presentation for 35 attendees.
- American Physics Society (10K total attendees), Los Angeles, CA. Conference Presentation for 45 attendees.

PERSONAL

- Languages: English (CEFR-C1 Advanced). Chinese-Mandarin (native).
- Programming and Cloud Service Skills: Python, C++, PyTorch, Pandas, Scikit-Learn, PySpark, AWS.
- Interests: Violin (earned highest amateur certificate in China). Bouldering (indoor climb). Kung-fu tea brewing.