

# Yiming Wei

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## EDUCATION

### École Polytechnique - IP Paris

Sep 2022

M.Sc. in Mechanics / Biomedical Engineering

Paris

**GPA:** 3.8/4.0; 15.77/20

**Related courses:** Solid Mechanics, Fundamentals of Fluid Mechanics, Introduction to BME I: Biomechanics, Sensors and Devices, Data sciences of biological imaging, Cell Biology and Physiology, Machine learning for images and object recognition

### Nanjing University of Science and Technology. (Joint Programme with Lorraine University)

Sep 2018 - Jun 2022

B.Eng. in Materials Science and Engineering - Sino-French School of Engineers

Nanjing

**GPA:** 3.76/4.00; 90.21/100 (rank 1st)

**Related courses:** Fundamentals of Materials Science, Electrical Engineering, Analog & Digital Circuits, Analysis Methods in Materials Science, Materials Processing Technology

## HONORS & AWARDS

Institut Polytechnique de Paris Scholarship

2022-2023

National Scholarship (Awarded by Ministry of Education of China: top 1% )

2019-2020

Globalink Research Internship (Awarded by Canada Mitacs: 200 people per year nationwide)

2021

Special Scholarships (Awarded by NJUST: top 1%)

2018-2019, 2018-2019 , 2019-2020

First-Class Scholarships (Awarded by NJUST: top 3%)

2018-2019 , 2019-2020

## RESEARCH EXPERIENCE

### Validation and PCB Design of a Novel Inductive Dual-frequency Link for Wireless Powering of Miniature Neural Implants

Jul 2023 - Present

Prof. Sandro Carrara

BCI-EPFL

- Validation of WPT coil design and realize frequency matching
- PCB design of a novel inductive dual-frequency link

### Diffusion and Clustering of Passive particles in a bath of Micro-algae

Jun 2023 - Jul 2023

LadHyx

Prof. Gabriel Amselem

- Grow micro-algae *Chlamydomonas reinhardtii*
- Studying experimentally the motion of passive micrometric beads immersed in a suspension of micro-algae

### Segmentation and Statistical Analysis of Cellular Images using Deep-Learning

Apr 2023 - Jun 2023

LadHyx

Prof. Abdul Barakat

- Pre-process cell photos, label cells, train models using deep learning, and then count them
- Statistical analysis of the obtained data: diameter change, curve fitting

### Development of a Microfluidic chip Activator for a New Tuberculosis Screening Tool

Sep 2022 - Jun 2023

Epilab

Dr. Manon Giraud

- Improvement of the activator motion algorithm
- Design new PCB and envelope of activator

### Research on Two-dimensional WS2 in Ohmic Contact with Metal Electrodes

Jan 2022 - Jun 2022

Graduation design - NJUST

Prof. Xiang Chen

- Preparing single-crystal WS2 by CVD
- Comparing the contact mode and performance of conventional electrode contact and semi-metallic Bi electrode contact
- Optimizing the parameters to realize ohmic contact between electrodes and 2D materials under the new electrode contact

## Optimization of the Hygrothermal Performance of Building Envelope Systems

May 2021 - Oct 2021

RA-Université Laval

Prof. Alice Wang

- Learning about building envelopes and bio-based insulation materials in Quebec
- Using WUFI and COMSOL to simulate the hygrothermal properties of designed building envelope components
- Simulating the hygrothermal performance of the entire building envelope under Quebec climate conditions

## Fast Frequency Measurement Technology of Wideband Channelized Digital Receiver

Mar 2020 - Oct 2021

NJUST

Prof. Shanhong Guo

- Simulation study of the channelization model of a multi-phase filter bank
- Simulation study and improvement of transient autocorrelation frequency measurement algorithm
- Design of hardware implementation of frequency measurement algorithms

## PROJECT EXPERIENCE

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### IMA205 - Learning for image and object recognition

Mar 2023 - May 2023

Automated Cardiac Diagnosis Using Cardiac Magnetic Resonance Imaging (CMRI) and Machine Learning

Kaggle - Télécom Paris

- Created a system using machine learning to accurately diagnose heart disease from cardiac MRI images.
- Improved the system's accuracy by addressing data segmentation issues and trained two models, achieving up to 89% accuracy.

### BIO583 - Biological Imaging Data Science

École Polytechnique

Diagnostic of retinal disease using OCT images & Machine Learning

- Developed a machine learning model to analyze and diagnose diseases from medical images.
- Improved model performance through image pre-processing and key feature extraction.
- Ensured the model's decisions were transparent and understandable using interpretability techniques.

### MEC658C-Diagnostics and Treatment

Feb 2023 - Apr 2023

Innovating for Better Patient Care: Wireless, Waterproof ECG Devices for Long-term Monitoring

Hôpital Paris Saint-Joseph

- Clinical immersion for need identification and solution design
- Conceptual design of a wireless, waterproof ECG device for monitoring

## PROFESSIONAL EXPERIENCE

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### thyssenkrupp steering Changzhou Ltd.

May 2021 - Sep 2021

EE Lab Departement of Quality

Changzhou

- Study of electric power steering systems in vehicles
- Error diagnosis of ECUs in products and design analysis

## Skills and Languages

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- Computer skills: C, Python, R, Arduino, AutoCAD, Solidworks, Comsol
- Microfabrication: CVD, metal evaporation, wet and dry etching, photolithography, SEM
- Languages: English (IELTS 6.5), French (delf-B2) , Mandarin (Mother tongue)