Peng Miao

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EDUCATION

Sichuan University ***July 2023 - Present***

Master of Medicine in Basic Medicine **GPA: 3.6 / 4.0**

- Core Coursework: The Basic Cellular and Molecular Principles of Pathogenesis, Medical Molecular Biology, Medicinal Biotechnology Frontier, Seperation and Purification Technology of Protein and Enzyme, Nucleic Acid Molecular Cloning Technique, Practical Histological Technique
- Additional Coursework: Data Structure and Algorithm, Machine Learning, CNN, GNN, LLM(Transformers, BERT), Computer Organization and Architecture, Operating Systems, Computer Networks

Chongqing Medical University ***Sep 2018 - Jun 2023***

Bachelor of Medicine in Radiology **GPA: 3.6 / 5.0**

- Core Coursework: Medical Imaging and Diagnostic Radiology, Ultrasound Diagnostics, Interventional Radiology, Nuclear Medicine, Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Physiology, Biochemistry and Molecular Biology, Pathology, Immunology, and Cell Biology

RESEARCH EXPERIENCE

West China

July 2023 - Mar 2025

Graduate Researcher, advised by Prof.Canhua Huang ***Chengdu, China***

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Molecular Medicine Diagnostic and Testing Center, Institute of Life Science, Chongqing Medical University

Jan 2020 - Jan 2022

Undergraduate Researcher, advised by Assoc.Prof.Xiu Yun ***Chongqing, China***

- Assist in the construction of a mouse depression model (CUMS and CRS) and behavioral assessment experiments (SPT, SWM, OFT), as well as partial qPCR and WB experiments.
- Participate in discussion and interpretation to evaluate the effects of the depression model and related molecular mechanisms.

PUBLICATIONS

[1] Dysfunction of GluN3A subunit is involved in depression-like behaviors through synaptic deficits

J Affect Disord *Jul 1, 2023*

Zhang M, Kong X, Chen J, Liu W, Liu C, Dou X, Jiang L, Luo Y, Song M, ***Miao P****, Tang Y, Xiu Y.*

GluN3A knockout via CRISPR/Cas9 and viral rescue showed that hippocampal GluN3A deficiency induces depression-like behavior through synaptic protein loss, while its restoration reverses these effects, highlighting a potential antidepressant target.

INTERNSHIP EXPERIENCE

The Beibei Affiliated Hospital of Chongqing Medical University

Medical Intern *Chongqing, China* *Jan 2022 - Jun 2022*

- Rotated through multiple departments, including Radiology, Internal Medicine, and Surgery, gaining hands-on experience in clinical diagnostics and patient care.
- Assisted in medical imaging interpretation and interventional procedures under physician supervision.
- Conducted case studies and participated in discussions on disease mechanisms and treatment strategies.

The Second Affiliated Hospital of Chongqing Medical University

Medical Intern *Chongqing, China* *Jun 2022 - Jan 2023*

- Engaged in clinical training across Neurology, Cardiology, and Emergency Medicine, handling patient assessments and preliminary diagnostics.
- Assisted in surgical procedures, monitored post-operative patients, and gained experience in ICU patient management.
- Participated in multidisciplinary case discussions and contributed to research on disease imaging and treatment outcomes.

The University-Town Affiliated Hospital of Chongqing Medical University

Medical Intern *Chongqing, China* *Jan 2023 - Jun 2023*

- Trained in Oncology, Pediatrics, and Gastroenterology, performing clinical evaluations and assisting in treatment planning.
- Gained experience in radiotherapy planning, chemotherapy administration, and diagnostic endoscopic procedures.
- Assisted in patient counseling and provided support for clinical research on imaging biomarkers for disease prognosis.

PERSONAL PROJECTS

Personal Resume & Blog Website

- **Introduction:** This project combines a personal blog and resume into one website, developed with React and Bootstrap. It features an easy-to-use configuration system, allowing users to personalize their site by editing a JSON file. Ideal for anyone seeking a quick and simple way to create a personalized online presence.
- **Stacks:** React, Bootstrap, FastAPI *etc.*

Machine Learning & Deep Learning Tutorial

- **Introduction:** This tutorial provides a comprehensive guide to Machine Learning (ML) and Deep Learning (DL) concepts, algorithms, and techniques. It covers topics like supervised/unsupervised learning, neural networks, and advanced architectures such as CNNs and RNNs. Learners will gain the skills to implement ML/DL models and apply them to real-world problems.
- **Stacks:** Python, Numpy, Pandas, Scikit-learn, PyTorch *etc.*

SKILLS

- **Computer Science:** Programming languages (C, Java, Python, R, MATLAB), Data Structures and Algorithms, Machine Learning (scikit-learn, Pytorch, Huggingface *etc.*), Deep Learning (CNN, RNN), Natural Language Processing (BERT, Transformers *etc.*), Data Visualization (Matplotlib, Seaborn), Version Control (Git, GitHub), Database Management (MySQL, Sqilite).
- **Biomedical Sciences:** Molecular Biology, PCR Techniques, Western Blotting (WB), RNA extraction, cell culture, protein purification, CRISPR / Cas9, ELISA, flow cytometry, histology, microscopy (fluorescence, fluorescent), bioinformatics (BLAST, RNA-seq, scRNA-seq, ATAC-seq, Hi-C, Multi-Omics, *etc.*), biomedical big data analysis.

- **Mathematics:** Calculus, Linear Algebra, Probability and Statistics, Mathematical Modeling, Optimization, Numerical Methods, Differential Equations, Stochastic Processes, Time Series Analysis, Machine Learning Algorithms(Regression Analysis, SVM, KNN, Neural Networks *etc.*).
- **Physics:** Classical Mechanics, Thermodynamics, Statistical Mechanics, Quantum Mechanics, Electrodynamics, Solid State Physics, Computational Physics, Particle Physics, Mathematical Physics.

AWARDS & HONORS

Third-Class Scholarship for Advanced Individual in Technological Innovation

Chongqing Medical University **September 2022**

- Recognized for leadership in *The 2020 University Innovation Experiment Project* on NMDA receptor NR3A knockout mice and contributions to the *Sky Project in The Institute of Life Science,*, investigating NR3A's role in depression.
- Awarded the Excellence Award in *The 8th Concept Cup at Chongqing Medical University* for an outstanding research proposal on m6A methylation in autism.