

Wei-Kai Lin

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Education

China Medical University

Taichung, Taiwan

MEDICAL DOCTOR

2007-2014

- Got admission to Harvard Medical School Exchange Clerkship Program, completed rotation in Neurosurgery in Massachusetts General Hospital.
- Received scholarship in overseas clinical clerkship program.

Skills

Medicine General Physician, Obtained medical license in Taiwan

Python NumPy, pandas, sklearn, XGBoost

R dplyr, data.table, ggplot2, XGBoost

Deep Learning Keras, TensorFlow, Pytorch

Work Experience

Data Insights Research Lab

Academia Sinica, Taiwan

RESEARCH ASSISTANT

Jan. 2018 - present

- Constructed a 3D Convolutional Neural Network with potential to detect early neurodegeneration, by predicting brain age in healthy subjects with MAE of 4.29, correlation of 0.96. **[blog post]**
- Integrated an automated pipelined kidney sonography segmentation system with prediction of renal function. **[blog post]**
- Proposed an automated predictive method of septic patients' response to fluid therapy, with an AUC of 87%.
- Established a predictive system to identify potential septic patient in emergency department, exceeded standard clinical criteria by more than 0.25 in F1 score.
- Built a real-time interpretation & diagnosis system of cardiotocography, achieving 88% of accuracy.

Taiwan Medical Mission in the Demoractic Republic of São Tomé and Príncipe

*the Demoractic Republic of São
Tomé and Príncipe*

GENERAL PHYSICIAN

Aug. 2015 - Aug. 2016

- Provided free medical clinics to local people, treated more than 600 patients.
- Taught medical lectures to local medical staffs.
- Proposed a hand washing device assembled with locally available materials and promoted to local community.

Taipei Veterans General Hospital

Taipei, Taiwan

RESIDENT PHYSICIAN

Aug. 2014 - Jul. 2015

- Completed Post-graduate year medical training, qualified for specialty training.
- Completed elected 1-month training in Radiology, provided medical care to hospitalized patients before and after cerebrovascular interventions.

National Taiwan University Hospital

Taipei, Taiwan

INTERN

Jun. 2013 - May. 2014

- Completed additional elective Ophthalmology, Orthopedics, and Neurology courses.

Department of Neurosurgery, Massachusetts General Hospital

Boston, USA

VISITING CLERK

Feb. 2014 - Feb. 2014

- Completed all training courses, obtained an overall score of 95/100 from chief teaching physician.

Publications

Towards the Automation of Kidney Function Classification and Prediction Through Ultrasound-based Kidney Imaging Using Deep Learning

COLLABORATIVE PROJECT WITH BIG DATA CENTER, CHINA MEDICAL UNIVERSITY HOSPITAL

- Built a non-invasive renal function measurement system through ultrasound imaging, outperforming four nephrologists with ten-years clinical experience by 15% in accuracy.
- Submitted to npj Digital Medicine.
- **[blog post]**