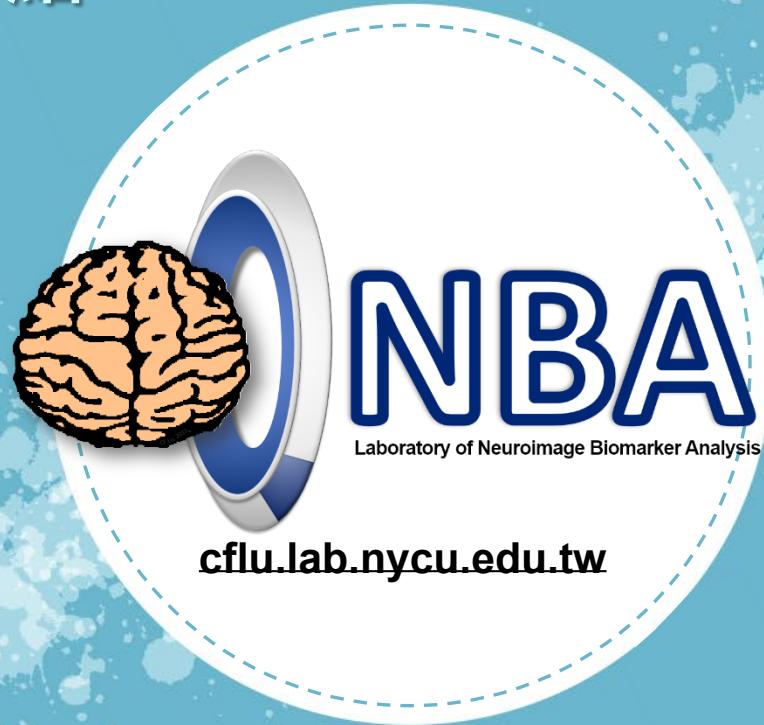


NBA Lab Introduction

NBA Lab介紹



Department of Biomedical Imaging
and Radiological Sciences, NYCU



陽明交大
NYCU

主持人
盧家鋒 教授
alvin4016@nycu.edu.tw

盧家鋒 教授
Chia-Feng Lu, PhD



Department of Biomedical Imaging
and Radiological Sciences, NYCU

學經歷

2002 - 2012
BSc & PhD



合作單位

放射線部
神經內、外科
心臟內科
復健醫學部
核子醫學部
腫瘤醫學部
精神醫學部



2014 - 2018

轉譯影像
研究中心、醫學系
執行長 助理教授



影像醫學部
神經內、外科

Multidisciplinary



Partnership

We work as a team.



Who are we?

認識我們團隊

NBA Lab Team



楊薇 Wei Yang, MS. Program
Graduate student, Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University
Research Fields: fMRI predictors of prognosis after IAT

郭冷 Ling Kuo, Ph.D. Program
Attending Physician, Division of Cardiology, Taipei Veterans General Hospital
Research Fields: Electrophysiology and Cardiovascular Imaging
[Contact](#)

林秉豐 Ping-Feng Lin, Ph.D.
Postdoctoral researcher, Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University
Research Fields: fMRI and DTI Study

陳俊儒 Chen-Jyun Ru, Ph.D. Program
Graduate student, Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University
Research Fields: Radionics/Machine

郭佩萱 Pei-Hsuan Kuo, Ph.D. Program
Graduate student, Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University
Research Fields: Radionics

陳元臻 Yuan-Chen Chen, MS. Program
Graduate student, Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University
Research Fields: AI in medical imaging

- 1位 博士後研究員
- 7位 博士班研究生
- 5位 碩士班研究生
- 1位 大學部專題生

- **陽明醫學系**
(北榮放腫科、三總放腫科)
- **北醫醫學系**
(雙和放腫科)
- **中山醫醫學系**
(北榮心臟內科)
- **陽明醫放系**
(國泰放射師技術主任)
- **中國醫醫放系**
- **中山醫醫放系**
- **高醫醫放系**
- **義守醫放系**

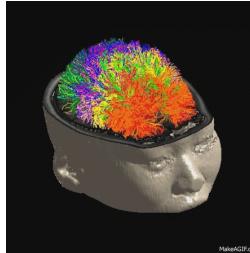
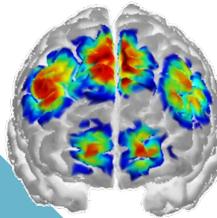


What are we doing?

我們的目標

三大研究主軸

- 臨床醫學影像整合人工智慧應用
(MRI/CT/DBT、腦部腫瘤、肺癌、乳癌、放射手術/治療、心臟疾病)
- 腦功能磁振影像與訊號分析技術
(功能性磁振造影、神經纖維重建、腦中風復健、腦血管畸形與病變)
- 臨床巨量追蹤資料庫建立與可視化分析
(療效評估、復發預警、早期病症診斷、疾病進程分析)

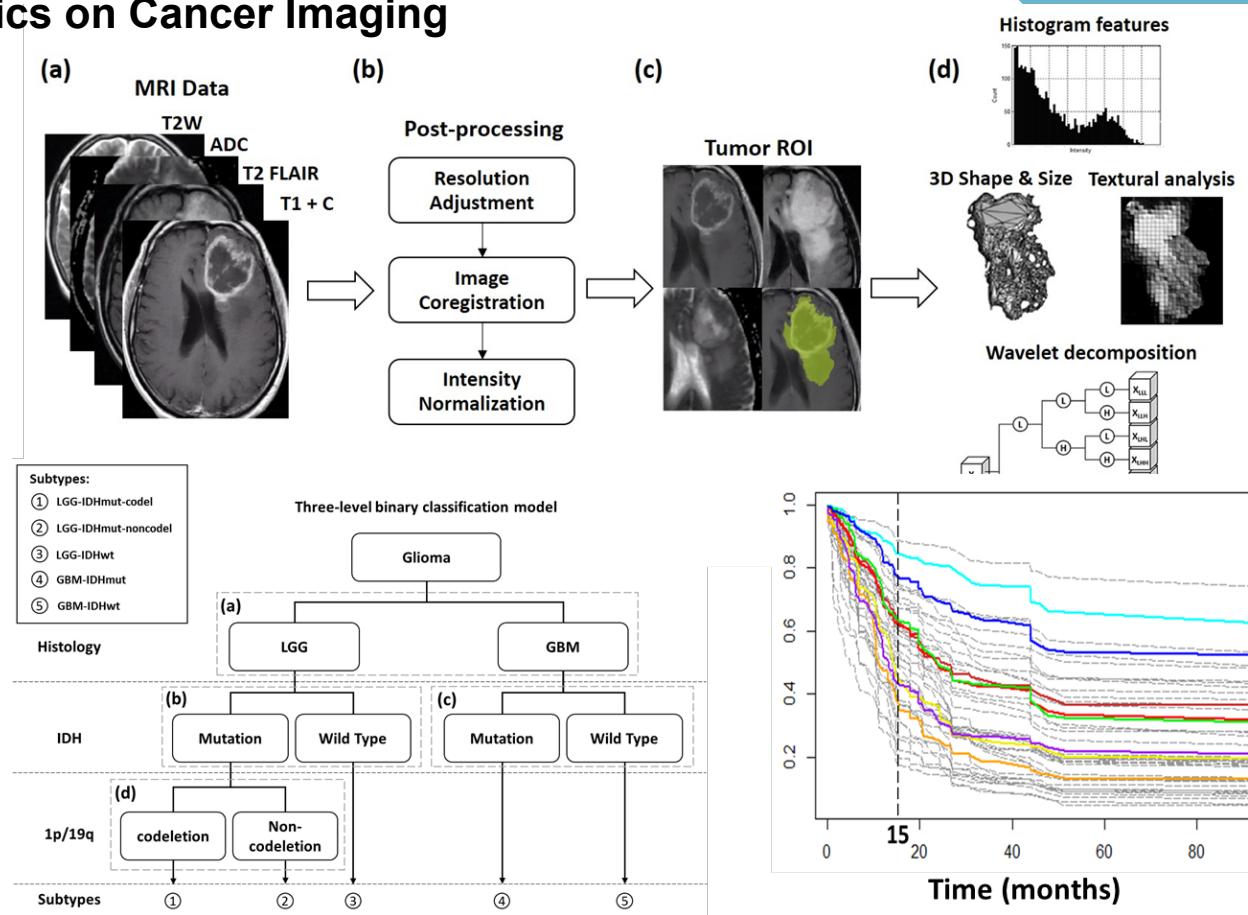


臨床合作單位

放射線部
神經內、外科
心臟內科
復健醫學部
核子醫學部
腫瘤醫學部
精神醫學部



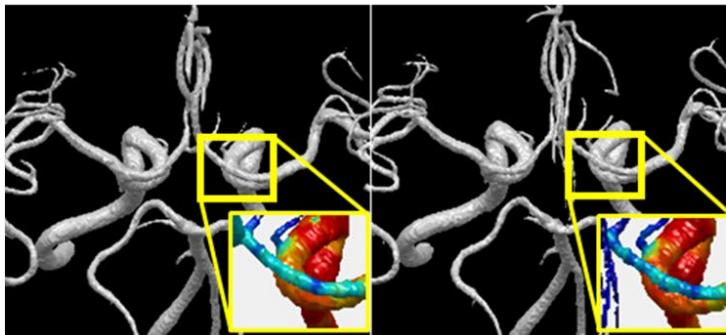
Assisting Diagnosis and Treatment of Cancer using Machine Learning and Radiomics on Cancer Imaging



Early Warning System for Intracranial Stenosis: A Serial MRA Study



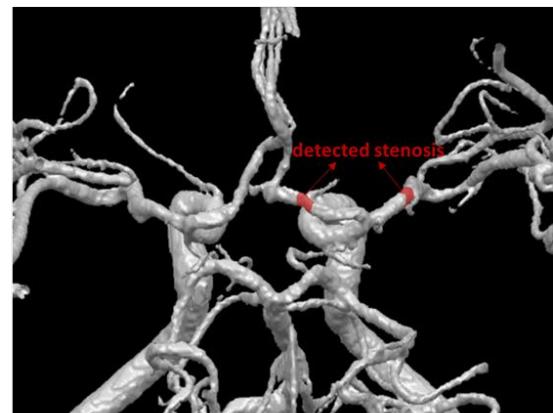
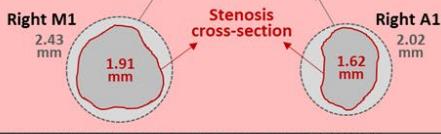
Co-registration & comparison



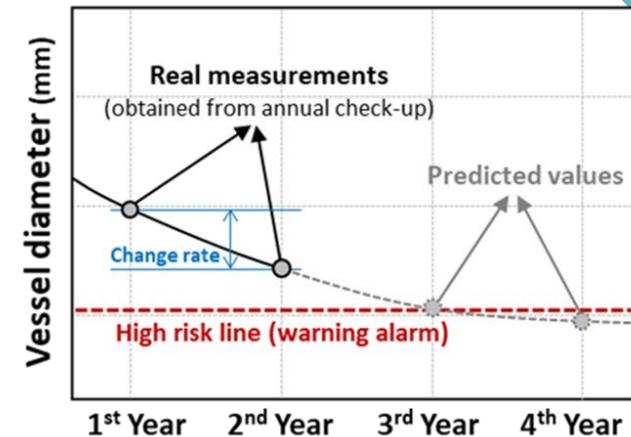
Automatic stenosis detection

- Right M1 stenosis diameter: **1.91 mm**
- Right M1 average diameter: **2.43 mm**
- Right A1 stenosis diameter: **1.62 mm**
- Right A1 average diameter: **2.02 mm**

Equivalent circle of cross-section (based on the average diameter)



Early warning based on temporal change profiles

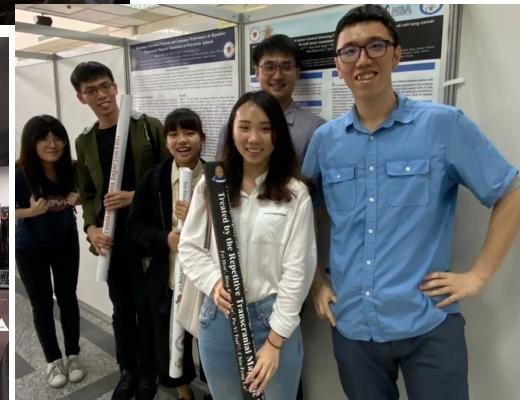
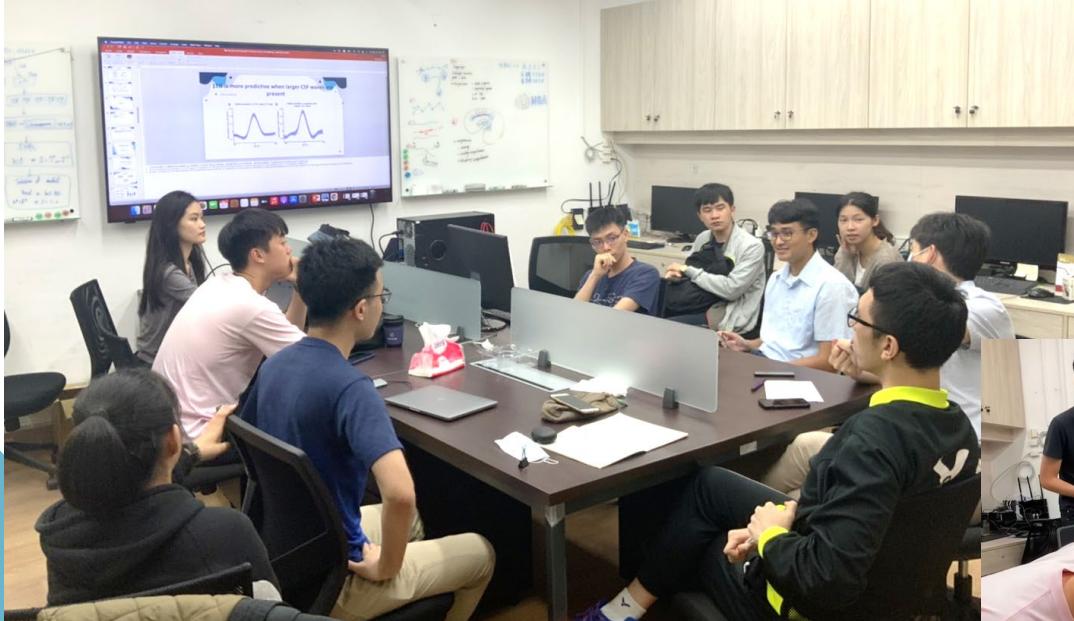




What can you learn?

交流&提升能力

We have the most friendly environment for learning, discussing and celebrating!



You learn here, you live here.

陽明交大
NYCU

Skills, Partnership/Supporting, Knowledge



陽明交大
NYCU



What can you achieve?
成就&成長



- 國際醫學影像研討會、原科院&分子影像年會
英文口報第一名、中文口報特優
- 國際最大磁振造影年會ISMRM
獎學金、口頭報告一等獎(台灣唯一得獎者)、二等獎
- 科技部、教育部優秀博士生獎學金 每月4萬補助3-4年



國家原子能科技研究院
分子影像技術學術競賽 特優獎

口頭競賽



summa
cum laude

magna
cum laude

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High-Impact Publications



Precision Medicine and Imaging

Clinical
Cancer
Research

Machine Learning-Based Radiomics for Molecular Subtyping of Gliomas

Chia-Feng Lu^{1,2,3}, Fei-Ting Hsu^{2,4,5}, Kevin Li-Chun Hsieh^{2,4,5}, Yu-Chieh Jill Kao^{2,5},

Sho-Jen C.
Chao-Chir



RESEARCH ARTICLE

IF=13.801, Q1

Disrupted Cerebellar Connectivity Reduces Whole-Brain Network Efficiency in Multiple System Atrophy

Chia-Fen



Brain Stimulation

journal homepage: <http://www.journals.elsevier.com/brain-stimulation>

IF=9.698, Q1

Cortical inhibitory and excitatory function in drug-naïve generalized anxiety disorder

Physical and Engineering Sciences in Medicine
<https://doi.org/10.1007/s13246-023-01234-7>

Cheng-Ta Li^a
Tung-Ping Su^b

SCIENTIFIC PAPER

IF=9.184, Q1

Predicting survival after radiosurgery in patients with lung cancer brain metastases using deep learning of radiomics and EGFR status

Chien-Yi Liao¹ · Cheng-Chi
Wan-Yuo Guo^{3,7} · Ren-Shy



Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com



IF=7.099, Q1

Original Article

Prediction of pseudoprogression and long-term outcome of vestibular schwannoma after Gamma Knife radiosurgery based on preradiosurgical MR radiomics

Huai-Che Yang^{a,b,1}, Chih-Chun Wu^{b,c,1}, Cheng-Chia Lee^{a,b,d}, Huai-En Huang^{e,f}, Wei-Kai Lee^e,
Wen-Yuh Chung^{a,b}, Hsiao-Mei Wu^{b,c}, Wan-Yuo Guo^{b,c}, Yu-Te Wu^{d,e,g}, Chia-Feng Lu^{e,f,g,*}



IF=6.901, Q1

cflu.lab.nycu.edu.tw



Build a Partnership You Can be Proud of

We Welcome You 😊

Chia-Feng Lu, alvin4016@nycu.edu.tw