WEI-HUNG WENG (JIMMY)

50 Staniford St., Suite 750, Boston MA 02114

(857) 272-4721 | ckbjimmy@gmail.com | ckbjimmy.github.io

Summary

- A medical doctor, and a self-taught data science lover
- Exploring clinical and -omic data to assist clinical decision making, data-driven medicine, and realize personalized medicine

Education

Sep 2015-   **Harvard Medical School,** Boston, MA
Candidate of Master of Medical Science in Biomedical Informatics (current GPA 4.0/4.0)
- Clinical informatics, machine learning, natural language processing, bioinformatics, computational biology
- Managing 3 collaborative works with MIT and Massachusetts General Hospital
- Scholarship of Harvard University Alumni Association in Taiwan (2015)
- Wang Yuan-Chun Memorial Medical Contribution Scholarship, Taiwan (2015)

Sep 2004   **Chang Gung University,** Taoyuan, Taiwan (first tier medical school in Taiwan)
- Jun 2011   *Doctor of Medicine (M.D.) (GPA: 3.99/4.0, Rank: 5/106)*
- Presidential Award 5 times (for top 5% students)
- 2 teaching assistant/recitation experiences in the 105 students class, 1 year class leadership
- Board Certificate of Medical Doctor in Taiwan
- Certificate of Advanced Cardiovascular Life Support

Jun 2011   **Harvard Medical School,** Boston, MA
Exchange Student (Massachusetts Eye and Ear Infirmary)

Verified Certifications and Professional Development

Jun 2016   Introduction to Computer Science and Programming Using Python. **MITx (edX).**
- Including python programming, data structure, algorithm
Introduction to Computational Thinking and Data Science. **MITx (edX).**
Jun 2016   Genomics Data Analysis. **HarvardX (edX).** (3 courses)
- Including Bioconductor, high-performance computing for genomics, and functional genomics
May 2016   Machine Learning. **Stanford University (Coursera).**
Aug 2015   Data Science Specialization. **Johns Hopkins University (Coursera).** (10 courses)
- Including R programming, data processing, statistical inference, regression, machine learning, reproducible research, natural language processing (capstone project)

Professional Experience | Research

Sep 2015 -   **Laboratory of Computer Science, Massachusetts General Hospital (MGH), MA** (top-ranked hospital in USA)
Research Fellow (Advisor: Dr. Henry Chueh [Director of LCS in MGH])
- Building an batch processing pipeline for unstructured clinical documents to predict referral using natural language processing, medical ontology and machine learning approach
  - Developing R package for clinical text processing and building machine learning model
  - Improving the performance of existed projects 'Expertaj' by implementing the machine learning-based algorithms and ontology-based database
- Extracting knowledge of relative hypoglycemia using MIMIC database (collaborate with MIT)
- Analyzing Cost-effectiveness decision of using continuous EEG on post resuscitation patients with hypoxic-ischemic encephalopathy (collaborate with MGH)
- Improving the outcome of kidney transplantation patients by using mobile-based educational modules and data analysis (collaborate with Brigham and Women's Hospital)
  - Semi-finalist of Brigham and Women's Physicians Organization Care Redesign and Incubator Startup Program

Jun 2016 - Aug 2016	**Division of Clinical Informatics Solutions and Services, Philips Research North America, MA** *Research Internship (Advisor: Dr. Sandeep Dalal)* • Designed and implemented machine learning and natural language processing method to predict pathological outcome by narrative radiology reports of cancer patients
May 2014 - Apr 2015	**Molecular Imaging Center, National Taiwan University, Taiwan** (rank #1 in Taiwan) *Research Associate (Advisor: Prof. Chi-Kuang Sun [Director of Center. SPIE, IEEE, OSA Fellow])* • Developed a method to identify skin melanocytes in noninvasive harmonic generation microscopic imaging • Managed collaborative image machine learning projects with two academic institutes • Assisted strategic planning of commercializing virtual biopsy microscopy, which meets the unmet need that can reach more than three million population with the risk of skin cancer • Three first author and five co-author conference presentations/papers, one first author peer-review manuscript under revision • First Prize Award. HIT Biomedical Innovation Hackathon
Jun 2009 - May 2011	**Kidney Research Center, Chang Gung Memorial Hospital, Taiwan** *Undergraduate Research Assistant (Advisor: Prof. Ya-Chung Tian [Director of Center])* • Investigated cytokines effects on polyomavirus BK infection • Great Honor. Taiwan Medical Development Awards for Outstanding Writings. Taiwan • Research Funding. Medical Foundation in Memory of Dr. Deh-Ling Cheng. Taiwan • Two conference presentations, and two student grant awards
Jun 2008 - May 2011	**Cancer Molecular Diagnostics Lab, Chang Gung Memorial Hospital, Taiwan** *Undergraduate Research Assistant (Advisor: Prof. Lee-Yung Shih [Director of Laboratory])* • Clinical data analysis of concomitance of essential thrombocythemia and chronic myeloid leukemia • One first author peer-review publication on SCI journal (citation: 1)
Jun 2009 - May 2011	**Department of Psychology, Chang Gung Memorial Hospital, Taiwan** *Undergraduate Research Assistant (Advisor: Prof. Chin-Yen Chen [Director of Department])* • Clinical data analysis of relationship between Stanford Sleepiness Scale and Heart Rate Variability in Medical Students • Two co-author peer-review publication on SCI journals (citation: 12)
Jul 2009 - Aug 2009	**Cancer Immunology and Gene Therapy lab, Johns Hopkins Medical Institute, MD** *Summer Research Assistant (Advisor: Prof. Tzyy-Choou Wu [Director of Laboratory])* • Journal article writing and literature reviews, and molecular cell biology techniques training • One co-author peer-review publication on SCI journals (citation: 35)

Professional Experience | Clinical

Aug 2012 - Apr 2014	**Chang Gung Memorial Hospital**, Linkou, Taiwan (the largest medical center in Taiwan) *Resident Physician in Pathology and General Medicine* • Supervised more than 10 medical clerks, interns and residents • Selected as visiting scholar to Department of Pathology, University of Tokyo Hospital, Tokyo, Japan
Jun 2010 - May 2011	*Rotating Internship* • Won OSCE Award. Taiwan Association of Medical Education • Won 2nd Prize in Medical Record Writing Competition
Jul 2012	**Mbanane Government Hospital**, Mbabane, Hhohho, Swaziland (the largest hospital in Swaziland) *Resident Physician (Medical volunteer of Taiwan Medical Mission in Swaziland)* • Two rural and suburban outreaches, and critical ward care
Aug 2011 - Jul 2012	**Republic of China Army**, Chungli, Taiwan *Medical Officer of Health, Secondary Lieutenant* • Managed a medical clinic, and a shelter for soldiers with psychiatric diseases

Publications [2 first-authored and 3 co-authored, all on SCI journals]

1. **Weng, W.-H.**, Liao, Y.-H., Tsai, M.-R., Huang, H.-Y., Sun, C.-K. (2016). Differentiating intratumoral melanocytes from Langerhans cells in non-melanocytic pigmented skin tumors in vivo by using label-free third harmonic generation microscopy. Journal of Biomedical Optics. (IF 2.859) (under revision)
2. Liu, C.-H., Tang, W.-R., **Weng, W.-H.**, Lin, Y.-H., & Chen, C.-Y. (2016). The process of coping with stress by Taiwanese medical interns: a qualitative study. BMC Med Educ, 16(1). (IF 1.218)
3. Lin, Y.-H., Chen, C.-Y., Lin, S.-H., Liu, C.-H., **Weng, W.-H.**, Kuo, T. B. J., & Yang, C. C. H. (2013). Gender differences in cardiac autonomic modulation during medical internship. Psychophysiology, 50(6), 521–527. (IF 2.986)
4. **Weng, W.-H.**, & Shih, L.-Y. (2011). Occurrence of BCR-ABL1-Positive Chronic Myeloid Leukemia following Essential Thrombocythemia. Acta Haematologica, 126(4), 220–223. (IF 1.116)
5. Hung, C.-F., Monie A., **Weng, W.-H.**, Wu, T.-C. (2010). DNA vaccines for cervical cancer. Am J Transl Res, 2(1), 75-87. (IF 3.402)

Selected Conferences [5 first authored and 5 co-authored, including 2015 NIPS workshop, SPIE Photonics West 2015]

1. **Weng, W.-H.**, Tsai, M.-R., Liao, Y.-H., Sun, C.-K. (2015, February). Differentiating pigmented skin tumors by the tumor-associated melanocytes based on in vivo third harmonic generation microscopy. Oral session presented at SPIE Photonics West 2015, San Francisco, CA.
2. **Weng, W.-H.**, Tsai, M.-R., Liao, Y.-H., Sun, C.-K. (2014, November). Identifying melanocyte in pigmented skin lesions based on in vivo third harmonic generation microscopy. Poster session presented at Biomedical Molecular Imaging 2014. Taipei, Taiwan.
3. **Weng, W.-H.**, Liu, W.-M., Tsai, M.-R., Liao, Y.-H., Sun, C.-K. (2014, November). In vivo quantification of melanin mass density in human by using third harmonic generation microscopy. Poster session presented at Biomedical Molecular Imaging 2014. Taipei, Taiwan.
4. **Weng, W.-H.**, Tian, Y.-C. (2010, August). Interleukin-1 beta Inhibits BK virus gene expression and replication in human renal proximal tubular epithelial cells. Oral session presented at Taiwan Medical Development Awards for Outstanding Writings. Taipei, Taiwan.
5. **Weng, W.-H.**, Tian, Y.-C. (2009, September). IL-1 has suppressive effect on BKV replication. Oral session presented at Summer Student Study for Infectious Disease. Kaohsiung, Taiwan.

Language / Skills / Other

- English (fluent, IELTS 8.0), Chinese (native), Taiwanese (native), Japanese (basic)
- Expertise in R, Python, SQL, Linux, bioconductor, cTAKES, UMLS, MIMIC, LaTeX, Tableau, Matlab, ImageJ, Fiji
- Developed iOS App 'LabBuddy' (more than 10,000 downloads)
- Yearbook designer (medical school), teaching fellow in medical camps and Biology Club, photography, cycling, swimming
- Core member of Investigator Biosciences Society Taiwan (web, design)