**Zheng-Chen Yao**

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***EDUCATION***

**National Yang Ming Chiao Tung University**

Bachelor of Science in Life Science, June 2014

***EXPERIENCE***

**Research Assistant | Taipei Veterans General Hospital:** Sep 2017 – Sep 2018

* Cell culture of human primary urothelial cell and human primary endothelial cell with ketamine and rapamycin treatment.
* Immunohistochemistry of rat bladder with ketamine and rapamycin treatment.
* Collecting bladder tissue sample of interstitial cystitis patients.

**Research Technician | Baylor College of Medicine:** Nov 2018 – Present

* Use optical coherence tomography to acquire real-time images of tissues and cells in mouse model.
* Implement an ensemble machine learning model to solve the uncertain biological classification problem and apply it to identify the spermatozoa state in vivo.
* Imaging female reproductive tract of mice by micro-computed tomography and contributing the qualitative perspectives to support hypothesis.

***PROJECTS***

**Quantitative analysis of hyperactivation state of sperm in female reproductive tract (Python)**

* Reduce the dimensionalities of data by principal component analysis for better data visualization.
* Take advantage of bootstrapping, multiple weak classifiers were created by k-mean clustering.
* Majority voting was applied on the aggregation procedure for classification problem.
* Propose a quantitative method to identify the state of spermatozoa in vivo and render strong in-vivo evidence for the requirement of reproductive events.

**Personal Front-End Project - My Portfolio (HTML, CSS, JavaScript)**

* Use JavaScript to build up interactive personal portfolio.
* Style and organize website by CSS.
* Hosting my personal portfolio on GitHub page.

***COURSEWORKS***

### **Computational Thinking for Problem Solving (Coursera - UPenn)**

Credential ID: P3TKHH37K3BP Grade: 98.64/100

### **Programming Foundations with JavaScript, HTML and CSS (Coursera - Duke University)**

Credential ID: TFBY54WRCSSD Grade: 100/100

***PUBLICATIONS***

* **Myometrial progesterone receptor determines a transcription program for uterine remodeling and contractions during pregnancy *2022***

SP Wu, T Wang, ZC Yao, MC Peavey, X Li, L Zhou, IV Larina, FJ DeMayo

PNAS nexus 1 (4), pgac155

* **Quantitative analysis of motility of hyperactivated spermatozoa with optical coherence tomography in mouse female reproductive tract *2022***

Zheng-Chen Yao, Kohei Umezu, Shang Wang, and Irina V. Larina

***(Under peer review)***

***CONFERENCES***

* **Oral Presentations**
* **Quantitative OCT analysis of sperm hyperactivation state in mouse fallopian tube**

ZC Yao, S Wang, I Larina ***SPIE* *2022***

Dynamics and Fluctuations in Biomedical Photonics XIX, PC119590I

* + **Imaging the transporting function of mouse oviduct in vivo using OCT**

S Wang, R Syed, ZC Yao, I Larina ***SPIE* *2020***

Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXIV 11228

* **Poster Sessions**
  + **Quantitative Optical Coherence Tomography analysis of Spermatozoa Hyperactivation State in Mouse Oviduct *TFRS 2022***

ZC Yao, S Wang, I Larina

* + **New in vivo functional imaging approach for analysis of sperm hyperactivation in the mouse oviduct *TFRS 2021***

ZC Yao, S Wang, I Larina

***TECHNOLOGIES AND LANGUAGES***

* JavaScript, Python, HTML, CSS
* Git, Tailwind CSS