# TeYang Lau

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## WORK EXPERIENCE

**Research Assistant** | *Sleep & Cognition Laboratory, School of Medicine, NUS*            **2018—Present**
- Collaborated with external government and industry partners (HPB, Oura) to explore best approach in mining datasets and structuring new projects for public health intervention studies
- Mined HPB Fitbit longitudinal dataset that led to applications for better understanding public health behavior, analyzing sleep variability, and improving study design methods. Trained ML and statistical models to cluster and identify subgroups of adults differentially susceptible to unhealthy behaviours during COVID-19
- Analyzed effects of lockdown stringency on sleep and heart rate using Oura wearable data from 20 countries
- Leveraged behavioral, cognitive and MRI techniques to investigate the effects of napping, which improves memory encoding by 20% and benefits brain functioning
- Automated sleep visualization, computation and report generation that expedited processing time by 30-50%
- Co-led 2 nap research projects, co-authored 7 peer-reviewed manuscripts (3 selected for Editor's Choice)

**Data Science Intern** | *Programme Evaluation*, *Health Promotion Board*            **2021 (4 months)**
- Collaborated with Apple to drive HPB's business in promoting healthy lifestyles among the ~120k and growing participants of LumiHealth program. Analysed effectiveness of A/B experiments including new features and challenges/offers on the app to help improve the program, user experience and engagement levels
- Built a baseline workout recommender system for participants in HPB's future health programs
- Ensured data integrity by performing regular checks on and integrating the 56 data tables of LumiHealth app, and conducting User Acceptance Test of data ingested into Singapore's Population Health Data Hub

## EDUCATION

**Master of IT in Business Artificial Intelligence** | *SMU* | GPA: 4.00/4.00            **2021—2022**
- Relevant Courses: NLP; Computer Vision; Recommender System; ML Engineering; Applied ML; Multi-agent Systems; Text Analytics; Cybersecurity; Social Analytics; Data Management

**BA Psychology (Honours)** | *Flinders University* | 1st Class Honours            **2017**
**BA Psychology & Management** | *Murdoch University* | GPA: 3.75/4.00            **2014—2016**

**Certificates**: Machine Learning Engineering for Production (MLOps); Deep Learning Specialization; Tensorflow Developer; AI for Medicine; Big Data Analytics Using Spark

## SKILLS

- **Languages & Software:** Python, R, SQL, Matlab, PySpark, Tableau, SPSS
- **Technical Skills: Machine Learning** (Regression, Classification, Bagging, Boosting, Clustering), **Neural Networks** (Deep Learning, ConvNets, RNN, Graph NN), **Libraries** (Scikit-learn, Tensorflow, PyTorch), **Statistical Analysis** (T-Test, ANOVA, Non-Parametric Tests, Linear Mixed Models), **Data Science and Others** (Cleaning, Wrangling, Visualization, Hypothesis Testing, A/B Testing, Experimental Design, Git)

## AI/ML PROJECTS

- Auto-Trimming App for Diving Videos Using Object Detection Models | *Links: GitHub , Web App*
- AI Generated Singapore National Day Lyrics Using NLP Encoder Models | *Link: GitHub*
- Coffee Joint Recommendation App Using Factorization Machines| *Link: GitHub*

## PUBLICATIONS

- Minimum number of nights for reliable estimation of habitual sleep using a consumer sleep tracker. *Sleep Advances*, 2022. **Lau T** et al.
- A Randomised Controlled Trial of a Digital, Small Incentive-based Intervention for Working Adults with Short Sleep. *SLEEP*. 2022. Ong JL, Massar SAA, **Lau T**, et al. (Accepted)
- A longitudinal analysis of COVID-19 lockdown stringency on sleep and resting heart rate measures across 20 countries. *Scientific Reports,* 2021. Ong JL, **Lau T**, et al.
- COVID-19 related mobility reduction: heterogenous effects on sleep and physical activity rhythms. *SLEEP,* 2020. Editor's Choice. Ong JL, **Lau T**, et al.
- A daytime nap restores hippocampal function and improves declarative learning. *SLEEP,* 2020. Editor's Choice. Ong JL, **Lau T**, et al.