Wen-Kai Chung

✉ Email: wkaichungtw@gmail.com
🌐 Website: https://wk-chung.eu/about/

I am a data scientist with a background in BS mathematics and MS economics. I have 5+ years of programming experience and 4 years of full-time data scientist experience in both academia and industry, specializing in time series and NLP. With excellent communication ability, technical skills, and agile working experience, I am seeking a full-time Data Scientist/ML Engineer/ML Scientist position.

Software Skills

Programming	Python, C++, Dart (Flutter), SQL.
CI/CD	GitHub Actions, Jenkins, OpenShift, Docker, Bash shell script.
Cloud	Azure DevOps, Azure Synapse, Azure ML.

Work Experience

Data Science Intern & Thesis Student
Lufthansa Technik
05.2022 – 03.2023
Hamburg, Germany

- Implemented Transformer and Kaggle M5 model for hierarchical flight hours forecast at operators, aircraft types and cities levels. Outperforms company's existing XGBoost model.
- Built end-to-end ML and improved code base efficiency with object-oriented programming.
- Deployed visualization tools, effectively replacing Tableau for handling hierarchical data with millions of rows and providing more interpretable insights.
- **Skills:** PyTorch, Plotly, Sktime, Pydantic, Pytest, Sphinx, Poetry.
- **Methodologies:** Hierarchical time series, Tree models, Transformer, N-BEATS, ETS, ARIMA.

Data Science Intern
Forecasty.AI (BASF funded start-up)
06.2021 – 04.2022
Mannheim, Germany

- Led the beta release of an AutoML platform, functioned as a technical mentor for 3 data science interns and took charge of the management of the development sprints and Kanban board.
- Customized ML models with advanced techniques for demand and price forecasting, which improve 25% accuracy compared to existing models and lay foundation for future model developments.
- Converted a big firm to the first long-term client by delivering a forecasting model with less than 5% test error.
- **Skills:** Docker, Argo workflow, Azure DevOps, GluonTS, FB Kats, Hyperopt, SHAP.
- **Methodologies:** Mixed-frequency models, Gaussian Process, Bayesian optimization, Residual block bootstrapping, DeepAR, LSTM, VAR, VECM.

Data Science Researcher
Institute of Information Science Academia Sinica (top 1 research institute in Taiwan)
02.2018 - 12.2018
Taipei, Taiwan

- Combined structural data (company financial statement) with unstructured data (business news) into knowledge graph, outperforming Word2vec and Glove for downstream classification task.
- Designed an NLP model to match company name entities, and to classify the commercial relationships among companies in knowledge graph as upstream, downstream, parallel cooperation, or no relationship.
- Attended HCI International 2019 for paper publication.
- **Skills:** Selenium, Beautiful Soup, NLTK, spaCy, PyTorch, Linux.
- **Methodologies:** Glove, Word2Vec, Hidden Markov Model, Knowledge Graph.

Graph Researcher 06.2016 - 08.2017
Department of Economics, National Taiwan University Taipei, Taiwan

- Assisted to solve a cyclic graph repeated game on how people transformed information on edges, and under which graph assumption they can raise a successful one-shot revolution.

Quantitative Analyst 02.2016 - 04.2016
Taichung Commercial Bank Taipei, Taiwan

- Predicted the exchange rate of seven major foreign currencies by analyzing news and tracking Forex.
- Automate financial derivatives calculation using Excel VBA, improving daily work efficiency.

Education

University of Mannheim Mannheim, Germany
MS Economics 09.2019 – 02.2023

- GPA: 1.6
- Specializations: Multivariate Time Series Analysis, Game Theory, Advanced Econometrics, Industrial Organization, Causal Inference.
- Awards: DAAD Graduation Scholarship.
- Thesis: Evaluation of Hierarchical Model with Top-down Alignment against Transformer for Time Series Forecasting (Grade: 1.3).

National Taiwan University (top 1 university in Taiwan) Taipei, Taiwan
Double Degrees in BS Mathematics & BA Economics 09.2010 - 06.2014

- GPA: 3.53/4.3, top 10%. (Equivalent Germany GPA: 1.8)
- Specializations: Advanced Linear Algebra, Ordinary/Partial/Stochastic Differential Equations, Advanced Calculus, Advanced Statistics, Probability Theory.
- Awards: Presidential Awards (top 3 students in math department), Chien Shih-Liang Scholarship (top 2 individuals out of 3000+ applicants)

Publications and Projects

Upstream, Downstream or Competitor? Detecting Company Relations for Commercial Activities ⧉
presented on Human-Computer Interaction International Conference (HCII), Orlando USA, June 2019

- Proposed a novel word embedding scheme by building a multi-relational graph between target words (company names) and contextual words extracted from news, which outperformed the industry-standard word2vec and Glove embedding approaches with a F1-score of 0.77.

Kaggle Competition: Google Isolated Sign Language Recognition 04.2023 - 05.2023

- Trained a deep learning model on large video inputs to predict the sign language from various singers.
- **Methodologies:** Graph Convolutional Network (GCN), Temporal Convolutional Network (TCN).

Kaggle Competition: Acea Smart Water Analytics 01.2021 - 03.2021

- Led a team to work on the project of water volume forecast and causal inferences for 4 waterbodies in Italy, responsible for literature review, code work distribution and integration.
- **Methodologies**: ARIMA, VAR, VECM, LSTM.

Languages

Chinese ◆◆◆◆◆ English ◆◆◆◆◆ German ◆◆◇◇◇

Certificates

DataCamp: 3 career tracks ⧉ (254 hrs)   Deeplearning.AI: Deep Learning & NLP tracks ⧉ (208 hrs)