

Wen-Kai Chung

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I am a data scientist with a background in BS mathematics and MS economics. I have 4+ years of programming experience and 3 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.



Programming Skills

Python	◆◆◆◆◆	C++	◆◆◆◆◆	HTML	◆◆◆◆◆
Matlab	◆◆◆◆◆	R	◆◆◆◆◆	JavaScript	◆◆◆◆◆
LaTeX	◆◆◆◆◆	SQL	◆◆◆◆◆		



Work Experience

Data Science Intern & Thesis Student

05.2022 – 03.2023

Lufthansa Technik

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:** SQL, PyTorch, Plotly, Dash, Sktime, Sphinx, Pydantic, Pytest, Doctest, Poetry, Git, Bash.
- **Methodologies:** Hierarchical time series, Tree models, Transformer, N-BEATS, ETS, ARIMA.

Data Science Intern

06.2021 – 04.2022

Forecasty.AI (BASF funded start-up)

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

02.2018 - 12.2018

Institute of Information Science Academia Sinica (top 1 research institute in Taiwan) 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

Department of Economics, National Taiwan University

06.2016 - 08.2017

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

Taichung Commercial Bank

02.2016 - 04.2016

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

MS Economics

Mannheim, Germany

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)

Double Degrees in BS Mathematics & BA Economics

Taipei, Taiwan

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)