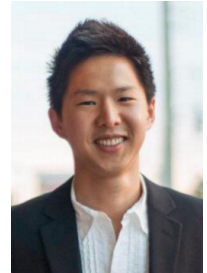# Chatdanai Lumdee, PhD

-- A lifelong learner. Physicist and data scientist. Building his mastery towards advanced-tech society.
-- Website: clumdee.github.io

SUMMARY

Chatdanai started his career as an optical scientist with specialization in nanophotonics. He is proficient with various optical characterization techniques especially microscopy and spectroscopy. His research work covered both experimentation and numerical simulation which produced a record of publications in top-tier scientific journals and presentations at international conferences.*

He later developed proficiency in data science and analytics, together with working knowledge in web technology.** His expertise leads him to join top tech firms in Southeast Asia across different fields.

Chatdanai's fluency in optics and data science offers him capabilities to collaborate efficiently in a multidisciplinary team aiming to develop innovative technology.

*Links to publications and presentations.
**Some side projects on website and GitHub

TECHNICAL STACKS

Data Analytics: Python, SQL, Matlab, Origin, Excel, PowerBI, Grafana, Metabase, …

Web Dev: HTML, CSS, Javascript, Bootstrap, Flask, Dash

Optics: Microscopy and spectroscopy (optical, Raman, fluorescence, magneto-optical),
micro/nanofabrication (thermal and e-beam deposition, colloidal lithography),
characterization (AFM, SEM, ellipsometry),
3D Electromagnetic simulation (CST Microwave Studio, Lumerical),
LabVIEW for hardware system control

EXPERIENCE

Data Science / Analytics Research Manager   05/2022 – present
Growth Team, LINE MAN Wongnai – Bangkok, Thailand

- **Lead research and implementation efforts to push ideas from development to business-as-usual**
  - Examples: forecast engine, realtime demand/supply management, coupon optimization

Data Scientist   08/2019 – 05/2022
Data Science, Agoda (part of Booking Holdings) – Bangkok, Thailand

- **Anomaly detection service**
  - Led algorithm research and prototyping including getting detection time down to 1 minute

- **Fraud prevention**
  - Led development of multiple machine learning models that save >1M USD annually

Data Scientist   09/2018 – 08/2019
Applied Intelligence, Accenture Digital, Accenture – Bangkok, Thailand

- **Digital Lending (Analytics Workstream)**, Leading Thai Bank
    - Supported analytics work such as integrating 3rd party data, project planning and optimization
    - Served as an analytics contact point for operation personnel up to management

Data Scientist   11/2017 – 08/2018
KLabs, Kasikorn Business-Technology Group (KBTG) – Bangkok, Thailand

- **Personal Investment Recommendation:** Built a machine learning model to integrate with Kplus. Offering the 1st national scale app-based intelligent mutual fund recommendation to > 8M users.

Research Scientist (Postdoctoral)   04/2016 – 10/2017
Department of Physics, University of Gothenburg/Chalmers – Gothenburg, Sweden

- **Next Generation Data Storage Technology (magnetoplasmonics, nanomagnetism):** Explored the interplay between nanoscale optics and magnetism with the aim to develop a technological platform for the next generation of data storage units (European Union's EU Horizon2020 program).
    - Developed protocols to fabricate novel type of metallic nanostructure arrays and to enable rapid transfer of nanostructures to arbitrary substrates
    - Designed and set up hardware control system using LabVIEW to automate measurement and data collection process
    - Performed numerical 3D electromagnetic simulation to discover reasons behind experimental data

Research Scientist (PhD Candidate)   08/2010 – 01/2016
CREOL/The College of Optics and Photonics – Orlando, Florida, USA

- **Optical Interactions at the Nanoscale (nanophotonics, plasmonics):** Studied plasmon resonances at single-nanoparticle level. This field is the core foundation of several emerging technologies including single-molecular sensing, surface enhanced photocatalysis, and heat-assisted magnetic recording.
    - Designed and set up experiments to capture optical responses of single nanoparticles using microscopy and spectroscopy techniques
    - Performed numerical 3D electromagnetic simulation to discover reasons behind experimental data

EDUCATION

Ph.D. in **Optics and Photonics** (GPA: 3.95/4.00)   08/2010 – 12/2015
CREOL/The College of Optics and Photonics, University of Central Florida – Orlando, Florida, USA

B.Eng. in **Nano-engineering** (GPA: 3.91/4.00)   08/2006 – 05/2010
Chulalongkorn University – Bangkok, Thailand