

## Chatdanai Lumdee, PhD

-- A lifelong learner. Physicist turned data scientist. Building his mastery towards data-driven society.  
-- Website: [clumdee.github.io](https://clumdee.github.io)

### SUMMARY

Chatdanai started his career as an optical scientist with specialization in nanophotonics. His research produced a record of publications in top-tier scientific journals and presentations at international conferences.\*

He later developed proficiency in data science with skills in data analytics, machine learning, and big data technology.\*\* His expertise leads him to join top tech firms in Southeast Asia across different fields. Delivering data solutions that help improve decision making, marketing, and operation efficiency.



\*Links for [publications](#) and [presentations](#).

\*\*Some side projects on [website](#) and [GitHub](#) e.g. [Home Weather Station with Azure Cloud](#).

### EXPERIENCE

#### Data Scientist

08/2020 – present

#### Senior Data Analyst

08/2019 – 08/2020

Data Science, Agoda (part of Booking Holdings) – Bangkok, Thailand

- **Anomaly detection service, preventing booking losses in all channels across platform**
  - Implement a robust algorithm that auto-scales with traffic and is adaptive across all channels
- **Fraud prevention using data analytics and machine learning, saving millions USD annually**
  - Develop machine learning models to identify high risk bookings, track the performance with fraud agents, support models integration, monitor and update models
  - Improve human-machine communication for real-time fraud prevention by integrating machine learning jobs and alert bot to notify fraud agents
  - Automate workflow to evaluate fraud prevention protocols with high-level summary and real-time dashboard for the operation team to track their performance and to improve their protocols
  - Implement tools to improve working efficiency, e.g. ML Health, Feature Store, and share knowledge with other teams

#### Data Scientist (Digital Consultant)

09/2018 – 08/2019

Applied Intelligence, Accenture Digital, Accenture – Bangkok, Thailand

- **AI-Powered Call Center [Business Dev]:** off-load queue with speech recognition and call deflection
- **Personalized Wealth Management [Business Dev]:** customer segmentation for investment products
- **Digital Lending (Analytics Workstream),** Leading Thai Bank 09/2018 - 05/2019
  - Coordinated with marketing team to co-create personalized emotive message at mass using micro-segment by transforming multi-dimensional data into easy to understand customer profiles
  - Coordinated with internal teams to integrate 3rd party data with internal data to enable targeting both existing and non-bank customers
  - Tracked campaign's feedback and created dashboards to support project planning and optimization
  - Served as an analytics contact point for operation personnel up to management ensuring our lead generating solutions to work at their best, operationally and strategically

## 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:** We 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 produce both stationary and transferable hybrid magnetic-metallic nanostructure arrays -- introducing nanoscale magneto-optical interaction on any type of substrates
  - Designed and set up hardware control system (LabVIEW) to automate measurement and data collection -- enabling large scale and continuous data collection
  - Conducted numerical 3D electromagnetic simulations -- designing, confirming, and understanding 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:** This research area 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 at single nanoparticle level
  - Developed new approaches to interactively control optical interaction between nanoparticles and metallic substrates
  - Conducted numerical 3D electromagnetic simulations -- designing, confirming, and understanding experimental data

## TECHNICAL STACKS

*Data Analytics:* Python, PySpark, SQL, Matlab, Origin, Excel, PowerBI, Tableau, Grafana, Metabase, Microsoft Azure, Azure Databricks

*Web Dev:* HTML, CSS, Javascript, Bootstrap, Django ([sample work](#))

*Others:* Optical experiment and simulation, nanofabrication, materials characterization, hardware system control (LabVIEW)  
Native Thai and fluent in English

## EDUCATION

### Ph.D. in Optics and Photonics

08/2010 – 12/2015

CREOL/The College of Optics and Photonics, University of Central Florida – Orlando, Florida, USA

GPA: 3.95/4.00

### B.Eng. in Nano-engineering (major in Nanoelectronics)

08/2006 – 05/2010

Chulalongkorn University – Bangkok, Thailand

GPA: 3.91/4.00, Graduated with First Class Honors