



OUDOM THACH

Address: Phnom Penh, Cambodia
Phone: +855 11 549 604 or 011 549 604
Telegram: +855 11 549 604 or @OudomZac2000
Email: oudom.thachreal2000@gmail.com
Website: <https://oudomthachdev.netlify.app/>
LinkedIn: www.linkedin.com/in/thach-oudom-b04201112 (Thach Oudom)
Github: <https://github.com/DukeDick>

SUMMARY

Mechatronics Engineering graduate and Master's student in Computer Science & AI with strong skills in Python, C++, SQL, and machine learning. Experienced in data analysis, predictive modeling, AI integration, IoT solutions, and full-stack development. Proficient with Flask, Gradio, and Hugging Face platforms. Passionate about AI-driven innovation, data science, and intelligent automation.

EXPERIENCE

AI Engineer Intern, AI FARM ROBOTICS and FACTORY AI CO., LTD March 2025 - June 2025

- Fine-tuning Whisper Large V2 for speech recognition to control a robot dog using Khmer and English languages.
- Collected 5,750 voice data samples from different people to avoid overfitting in WAV files before processing for training.
- Compare different speech recognition and translation models such as Whisper Small, Medium, Large V2, and Turbo.
- Implemented a user interface as an input system using HTML, CSS, and JavaScript to send data to a local server for the fine-tuned model to process speech.
- Integrated UDP and UART protocols on ESP32 to control the Mini Dynamo One robot dog. Developed a micro-ROS system on ESP32 for UDP and UART communication with the Mini Dynamo One robot, integrated with ROS 2.

Professional Trainee as Production and Electrical engineer, Thai PLC Center Jun 2023 - Oct 2023

- Hands-on expertise in Programmable Logic Controllers (PLCs), applying automation solutions to optimize efficiency. Product design, assembly, and quality assurance, utilizing AutoCAD and Fusion 360 to ensure precision in manufacturing.
- Electrical wiring and circuit design, including the development of detailed schematics and Bill of Materials (BOM) for seamless integration.
- Project coordination and cross-functional collaboration, working closely with sales and engineering teams to streamline production workflows.
- Energy monitoring and optimization, using V-BOX and PLC systems to track real-time power consumption, circuit breaker performance, and room temperature stability for improved sustainability.

Sales Assistant, Le Lézard Bleu

Jan 2015 - Jan 2018

- Translated documents from Khmer to English.
- Assisted staffs with communication needs, contacted buyers and research on souvenir frames.
- Helped staffs interact with foreign customers, ensured smooth customer experiences and clear communication.

EDUCATION

Master of Science in Computer Science (Part-time Evening Only) Jan 2025 - 2027 (Expected)

Fort Hays State University and American University of Phnom Penh

- Relevant coursework covers Digital Image Processing, Natural Language Processing, Deep Learning, Generative AI, Reinforcement Learning Advanced Programming, Advanced Software Engineering, and Data Mining.

Bachelor of Engineering Program in Mechatronics Engineering Jun 2019 - Oct 2024

Rajamangala University of Technology Lanna Chiang Mai (Cumulative GPA: 3.0)

- Relevant coursework covers mechanical engineering, electrical engineering, control systems, programming, with key courses covering topics like sensors, actuators, microcontrollers, mechanical design, signal processing, and system integration.

HIGHLIGHTED PROJECTS

Crop Recommendation Analysis and Prediction Using Machine Learning

- Developed and deployed a machine learning-based crop recommendation system leveraging soil nutrient and environmental data.
- Conducted exploratory data analysis (EDA) with statistical summaries, boxplots, and distribution plots to assess soil nutrients (N, P, K) and environmental
- Identified rainfall and humidity as the most influential predictors, followed by potassium and phosphorus, through feature importance analysis.
- Implemented and compared multiple classification algorithms (Decision Tree, Naive Bayes, Logistic Regression, Random Forest) on a 22-class crop dataset.
- Achieved 99.09% accuracy with Random Forest, demonstrating superior robustness in multi-class classification with strong precision, recall, and F1-scores.
- Validated model performance using confusion matrix, classification report, and accuracy comparison charts.
- Deployed the trained model via Streamlit, enabling real-time user input and instant crop recommendations through an interactive web application.

Benchmarking Lightweight CNNs for Skin Lesion Classification on the HAM10000 Dataset

- Conducted an experimental evaluation of five CNN architectures (ResNet-50, DenseNet-121, EfficientNetB0, ShuffleNetV2, and a custom CNN) on the HAM10000 skin lesion dataset.
- Implemented a standardized preprocessing and augmentation pipeline to ensure fair comparison across models.
- Designed and developed a lightweight custom CNN from scratch for efficient training and inference.
- Identified ShuffleNetV2 and EfficientNetB0 as the best trade-off between accuracy and computational efficiency, highlighting suitability for low-resource environments.

Khmer Language Modeling with LSTMs in PyTorch

- Built a character-level language model for Khmer news titles using Recurrent Neural Networks (LSTMs) in PyTorch.
- Prepared and processed dataset by extracting vocabulary, mapping characters to indices, batching, and padding sequences.
- Implemented an LSTM-based architecture with embedding, recurrent, and linear layers for sequence modeling.
- Trained the model with cross-entropy loss optimization, enabling accurate sequence prediction.
- Developed a text generation pipeline to produce new, plausible Khmer news titles by sampling from model outputs.
- Gained hands-on experience in sequence modeling, NLP preprocessing, and generative text modeling with PyTorch.

References

- Dr. Rina Buoy
- Visiting Researcher – Osaka Metropolitan University, Japan
- Applied AI Researcher – Techo Startup Center (TSC), Cambodia
- Adjunct Lecturer – American University of Phnom Penh (AUPP), Royal University of Phnom Penh (RUPP), and CamTech University
- Advisory Board Member – Paragon International University (CS PhD Program), AI Farm Robotics, Federation of Cambodian Startups, Federation of Cambodian Students Abroad
- Contact: +855 17 829 295
- Dr. Sothea Has
- Lecturer and Researcher, Department of Applied Mathematics and Statistics (AMS) & Mechatronics and Information Technology (MIT), Institute of Technology of Cambodia (ITC), Phnom Penh, Cambodia
- Ph.D. in Applied Mathematics from UPMC – Sorbonne Université; served as Teaching Assistant at UFR Mathematics, Université Paris Cité
- Postdoctoral research in the IMPT project focused on statistical and machine-learning-based parameterizations of gravity wave momentum fluxes in climate models at Université Paris Cité and École Polytechnique under the DataWave initiative
- Contact: +855 86 723 327

PROJECTS

- Crop Recommendation System With Streamlit
- Car Price Prediction Using Machine Learning
- Spam Detection System With Streamlit
- Loan Approval System
- GDP Analysis and Prediction
- Plant Disease Classifier
- Loan Repayment Prediction
- Kotlin Shopping List App
- Underwater Plastic Detection
- Breast Cancer Detection
- Classifying X-ray Images using Pytorch
- Personal Portfolio Website
- Rip Current Risk Detection
- Mangrove Species Classification
- Exoplanets Hunting Using Machine Learning
- Building and E-Commerce Clothing Classifier Model with keras
- Predict Energy Consumption
- Youtube Script Writing Tool Using LLM
- Benchmarking Lightweight CNNs for Skin Lesion Classification on the HAM10000 Dataset
- Predicting Customer Personality
- Credit Card Fraud Analysis
- Employee Promotion Prediction
- Aviation Accident Data Analysis

SOFTSKILLS

- Customer Service & Relationship Management
- Willingness to learn new software systems
- **Work under pressure and ability to work independently in a team**
- Problem-Solving & Critical Thinking
- Ethical Decision-Making
- Attention to Detail & Organization
- Communication & Negotiation Skills
- Strong commitment to work under pressure
- Time Management & Multitasking
- Analytical & Investigative Thinking
- Innovation & Process Optimization

TECHNICAL SKILLS

- **Programming Languages:** Python, MATLAB, C++, Java, JavaScript, PLC programming
- **Software:** Solidworks, Fusion360, AutoCAD, LabVIEW, ANSYS, Gazebo, Excel, Word, Canvas
- **Focus:** Machine Learning, Computer Vision, Mechanical Design, Data Science, Applied Control Systems, Generative AI tools, Natural Language Processing
- **Tools:** ChatGPT, Gemini, Sora, DeepSeek, Claude, PyTorch, TensorFlow, GitHub, GitLab, RDBMS, UI/UX

LANGUAGES

- Khmer (Native), English (Fluent), Thai (Fluent), French (Intermediate), Bahasa Indonesia (Intermediate), Vietnamese (Beginner)

CERTIFICATIONS AND AWARDS

- **IELTS (7.5 Overall) :** Listening 7.5, Reading 6.5, Writing 7.0, Speaking 8.5
- **Youth Model ASEAN Conference (YMAC) 2020, Singapore Polytechnic and RMUTL:** international cultural candidate, collaborated with students from various ASEAN countries virtually and onsite, Design Thinking, discussing issues and finding innovative solutions to challenges during the Covid-19 pandemic.
- **SP Virtual 2020, Singapore Polytechnic and RMUTL:** Learned and collaborated with both international and ASEAN student, ASEAN economics, and international laws.
- **Design Thinking x Slow Movement 2021, Nanhua University and RMUTL:** applied principles of Design Thinking to promote sustainable living and mindful practices, cultural collaboration, finding solutions to support elderly communities, promote local products, and learned a bit about Chinese language.
- **Fun Bahasa Indonesia & Cultural Course 2024 Batch V (FBICC), Institute Teknologi Sepuluh Nopember (ITS):** engaged in discussions on topics related to business in Bahasa Indonesia, basic Bahasa Indonesia for the workplace.



FACTORY AI CO., LTD

CERTIFICATE OF INTERNSHIP

THIS CERTIFIED THAT

Thach Oudom

Has successfully completed the internship program in **Intern AI Engineer**
from **March 17th to June 16th 2025**

We found him sincere, hardworking, dedicated, and result oriented.

He worked well in a part of team during his tenure.

We take this opportunity to thank him and wish him for the best in his future.



FACTORY AI CO., LTD



Test Report Form

ACADEMIC

NOTE Admission to undergraduate and post graduate courses should be based on the ACADEMIC Reading and Writing Modules.

GENERAL TRAINING Reading and Writing Modules are **not** designed to test the full range of language skills required for academic purposes.
It is recommended that the candidate's language ability as indicated in this Test Report Form be re-assessed **after two years** from the date of the test.

To find out more about IELTS, IELTS band scores and the CEFR levels, please visit ielts.org/scores

Centre Number

TH056

Date

07/DEC/2024

Candidate Number

501249

Candidate Details

Family Name

THACH

First Name(s)

OUDOM

Candidate ID

N00325270



Date of Birth

07/12/2000

Sex (M/F)

M

Scheme Code

Private Candidate

Country or
Region of Origin

(Leave blank if different from Nationality)

Country of
Nationality

CAMBODIA

First Language

KHMER

Test Results

Listening

7.5

Reading

6.5

Writing

7.0

Speaking

8.5

Overall
Band
Score

7.5

CEFR
Level

C1

Administrator Comments

(Large empty box for administrator comments)

Recognising organisations must verify this score at ielts.org/verify

Validation stamp

Date

09/12/2024

Test Report
Form Number

24TH501249THAO056A



CAMBRIDGE
English

Certificate No. HOEI..04730



A Place Where People Care

Licensed by Ministry of Education
Youth and Sports

Home of English International

hereby certifies that:

MASTER OUDOM THACH

has successfully graduated from

Grade VIII

Home of English Program

and has been awarded a

*** Merit Pass ***

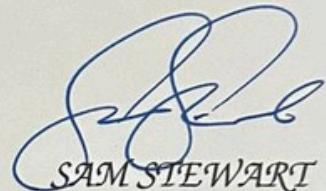


*Given in Phnom Penh Cambodia
On September 29th, 2015*




KANCHANA

School Director


SAM STEWART

Director of Studies

The Keystone School

Bloomsburg,



Pennsylvania.

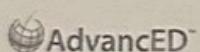
This Certifies That

Oudom Thach

Has successfully completed the course of study in accordance with the requirements of the Pennsylvania State Board of Private Licensed Schools and is therefore awarded this

Diploma

on the Twentieth Day of March 2019



Erica Rhone

Erica Rhone, Head of School

Angela M. Stuart

Angela M. Stuart, Deputy Head of School



Candidates for Thai Royal Scholarship
to Continue Higher Education in Thailand (Bachelor Degree)

Rajamangala University of Technology Lanna (RMUTL)

Successful Candidates

No.	ID Code [Ref. No.]	Name	Gender	Date of Birth	Program
1	1040 [277/Social]	Than Sovandy	M	31.07.1997	International Business Management (IBM)
2	1681 [416/Science]	Thach Oudom	M	07.12.2000	Mechatronics Engineering
3	1269 [667/Science]	Pet Kongeng	M	24.06.2000	Mining Engineering

Total: Three (3) candidates.

Please immediately contact to Department of Culture Relations and Scholarships of the Ministry of Education, Youth and Sports.

ພລເຕອກ

(Gen. Vichit Yathip)

Chief of Administrative Committee of
Her Royal Highness Princess
Maha Chakri Sirindhorn Education Project

January 28, 2019.



Dr. HANG CHUON NARON

Minister

Ministry of Education, Youth and sport

January 28, 2019.



Rajamangala University of Technology Isan Surin Campus
Certificate of Completion

This is to acknowledge that

Oudom Thach

Has completed

A Training Course on: Thai Language Preparation

Held between 18 March to 30 May, 2019

at Rajamangala University of Technology Isan Surin Campus

A blue ink signature in cursive script, reading 'JM'.

(Assistant Professor Dr. Samnang Saowakoon)

Vice – President for Surin Campus



Rajamangala University of Technology Lanna

This is to certify that

Mr. Oudom Thach

has participated in "English Proficiency Test"

RMUTL English Skill Competition 2019

28th August, 2019

Sirilak

Asst.Prof. Sirilak Infang

Head of RMUTL Language Center



Certificate of Completion

Presented to

Oudom Thach

for completing a 30-hour full session in the
Developing Speaking Skills and Critical Thinking Ability Using Ideation Discussion Activities
in Design Thinking Course

4 Oct - 27 Dec 2020

Teerasak Urajananon

Assoc. Prof. Dr. Teerasak Urajananon
Vice President for Academic and Students Affairs
Rajamangala University of Technology Lanna



Certificate of Participation

Presented to

Oudom Thach

Rajamangala University of Technology Lanna

for participating in the
Youth Model ASEAN Conference (YMAC)
31 Oct- 23 Dec 2020

A handwritten signature in black ink, appearing to read 'Mei Fong'.

Looi Mei Fong
Chairperson
Inter-Poly IS Integration Work Group

A handwritten signature in black ink, appearing to read 'Melissa Ong'.

Melissa Ong
Chairperson
YMAC 2020 Organising Committee

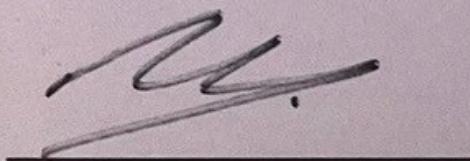
CERTIFICATE OF ATTENDANCE

This certificate is awarded to

OUDOM THACH

for participation in the

**Singapore From Your Home
- Understanding Cross-Cultural Diversity -**
programme conducted virtually by Singapore
Polytechnic from 22 December 2020 to
5 February 2021



Wee Eng Soon
Manager
Singapore Polytechnic International

CERTIFICATE

OF ACHIEVEMENT

BEST POPULAR awarded to

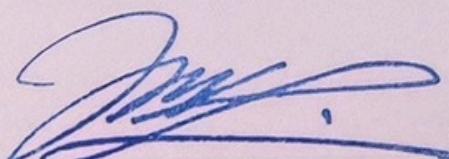
Oudom Thach

Mechatronics Engineering, Rajamangala University of Technology Lanna

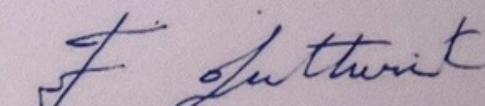
For your outstanding performance in the session Design Thinking x Slow Movement- Make Life Better Workshop during 20th November to 12th December, 2021 via virtual meeting.

With the excellent engagement of completing the 81 hours courses.

Hereby awarded this Best Popular certificate of distinction.



Dr. Tsong-Ming Lin
President of Nanhua University



Asst. Prof. Jutturit Thongpron
Acting President of Rajamangala University
of Technology Lanna

Organizing Partners



Design Thinking x Slow Movement- Make Life Better

Scholarship Award

Rajamangala University of Technology Lanna



Plai-ngam Kotchaprom
International Business Management
Senior
Thailand



Oudom Thach
Mechatronic Engineering
Junior
Cambodia



Praephan Chaisaowwong
International Business Management
Sophomore
Thailand



Nichavee Dee-in
Accounting
Freshman
Thailand



Nan Hlaingkham
English for International
Communication Senior
Myanmar



Nanthus University



Yi-Huei Chen
Department of International Affairs
and Business Junior
Taiwan



Yu-Yen Lai
Bachelor Program of
International Business Freshman
Taiwan



Hourng Sopheakanil
International Business, College of
Management Sophomore
Cambodia



Minh-Hien Nguyen
Department of Tourism
Management Senior
Vietnam



Peng-Cheang Hean
Internation Business Program
Sophomore
Cambodia

Certificate of Participation

GERTIFICATE

OF PARTICIPATION

This certifies that

Oudom Thach

has participated in the
Youth Model ASEAN Conference 2022



A handwritten signature in black ink, appearing to read 'Farhana' or 'Fawrah'.

FARHANA DAWOOD

Chair, YMAC 2022

A handwritten signature in black ink, appearing to read 'Looi' or 'Mei Fong'.

LOOI MEI FONG

Deputy Principal, Ngee Ann
Polytechnic
Chair, Joint Polytechnic
Integration Work Group



Course Outline

- The Usage of Multimeter
- Industrial Electrical Equipment
- The Structure, How Circuit Breaker works and how to connect Circuit Breaker
- The Structure, How Magnetic & Overload works and how to connect Magnetic & Overload
- The Control of AC Motor
- The Working Principle of Switching Power Supply
- The Structure, How Relay works and how to connect Relay.
- The Control of DC Motor with Relay
- How Timer works, and how to connect it with Parameter setting
- How Counter works, and how to connect it with Parameter setting
- Industrial Sensor and Applications

ข้อมูลวุฒิบัตรนี้ไว้เพื่อแสดงว่า

นายอุดม กาชา

ผ่านการอบรมหลักสูตร

Basic Electrical Circuit with AC Current and DC Current.

ในวันที่ 5 - 6 เดือน สิงหาคม พ.ศ. 2566

Nimith.

นิมิต แก้วกิ่ง

Master Trainer

บริษัท ไทยแอดวานซ์เรียนเตอร์ จำกัด

CERTIFICATE OF COMPLETION

THIS CERTIFICATE IS AWARDED TO

Oudom Thach

for the completion in the Online Fun Bahasa Indonesia and Cultural Course (FBICC) 2024 - Batch V
hosted by Institut Teknologi Sepuluh Nopember (ITS) Surabaya, Indonesia
on 5 November 2024 - 18 December 2024

ASSESSMENT

*ITS grading system

86 - 100 = A	Attendance	(30%) = 92
76 - 85 = AB	Class Performance	(20%) = 100
66 - 75 = B	Tasks	(20%) = 93
61 - 65 = BC	Test	(30%) = 96
56 - 60 = C		
41 - 55 = D	Total	= 95
0 - 40 = E		



DE001710190438

DATA ENGINEER

This confirms that Oudom Thach has been certified as a
Data Engineer by DataCamp.

Certified on July 30, 2025



A handwritten signature in black ink that reads "Jonathan Cornelissen".

Jonathan Cornelissen, CEO

AEDS0015347428447

AI ENGINEER FOR DATA SCIENTISTS ASSOCIATE

This confirms that **Oudom Thach** has been certified as an
AI Engineer for Data Scientists Associate by DataCamp.

Certified on July 25, 2025



A handwritten signature in black ink, appearing to read "Jonathan Cornelissen".

Jonathan Cornelissen, CEO

DSA0019262694335

ASSOCIATE DATA SCIENTIST

This confirms that **Oudom Thach** has been certified as an
Associate Data Scientist by DataCamp.

Certified on August 20, 2025



A handwritten signature in black ink, appearing to read "Jonathan Cornelissen".

Jonathan Cornelissen, CEO

AIFO026724790779

FUNDAMENTALS CERTIFICATION

AI FUNDAMENTALS

This confirms that **Oudom Thach** has been certified in AI Fundamentals by DataCamp

Certified on January 29, 2025



A handwritten signature in black ink, appearing to read "Jonathan Cornelissen".

Jonathan Cornelissen, CEO

DL0039898338087

FUNDAMENTALS CERTIFICATION

DATA LITERACY

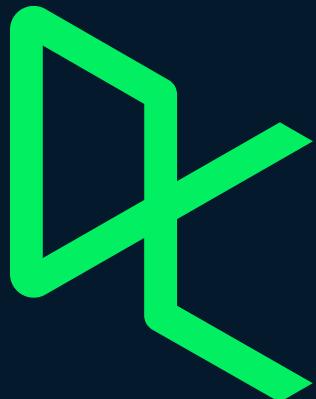
This confirms that **Oudom Thach** has been certified in Data Literacy by DataCamp

Certified on January 29, 2025



A handwritten signature in black ink, appearing to read "Jonathan Cornelissen".

Jonathan Cornelissen, CEO



STATEMENT OF ACCOMPLISHMENT

#577,171

HAS BEEN AWARDED TO
Oudom Thach

FOR SUCCESSFULLY COMPLETING
Associate Python Developer

LENGTH

30 HR

COMPLETED ON

JAN 23, 2025



Jonathan Cornelissen
CEO, DataCamp



STATEMENT OF ACCOMPLISHMENT

#589,135

HAS BEEN AWARDED TO
Oudom Thach

FOR SUCCESSFULLY COMPLETING
Python Developer

LENGTH

27 HR

COMPLETED ON

FEB 18, 2025



Jonathan Cornelissen
CEO, DataCamp





STATEMENT OF ACCOMPLISHMENT

#670,763

HAS BEEN AWARDED TO
Oudom Thach

FOR SUCCESSFULLY COMPLETING
Data Scientist in Python

LENGTH

26 HR

COMPLETED ON

JUL 23, 2025



Jonathan Cornelissen
CEO, DataCamp

