CURRICULUM VITAE

1. PERSONAL INFORMATION

Name: Bun Ratnatepy
Date of Birth: November 12, 2003
Nationality: Cambodian
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Portfolio: https://ratnatepy.github.io/Portfolio/

2. PROFILE

I am a fourth year Data Science student at the Institute of Technology of Cambodia who approaches every challenge with genuine curiosity and a commitment to continuous growth. Through my internship at the Ministry of Post and Telecommunications and hands on academic projects, I have learned to carefully prepare, analyze, and model data, always mindful of ethical considerations, to uncover insights that support better decisions. I value collaboration and constructive feedback as essential tools for learning, and I strive to apply data responsibly to address real world problems and contribute meaningfully to innovation.

3. EDUCATION

- 2022 – Present: Bachelor of Engineering in Data Science, Department of Applied Mathematics and Statistics, Institute of Technology of Cambodia
- 2022: Completed Six Diploma-Level English Courses, Australia Centre for Education. Courses included Business Writing Skills, Academic Vocabulary, Creative Writing, Creative Thinking & Problem-Solving Skills, Academic Reading & Vocabulary 2, and Academic Communication Skills.
- 2021: Senior High School Education Certificate (Grade B, overall score 98.412)
- 2019: General English Program, Australia Centre for Education

4. SKILLS

- **Technical:** Python, R, SQL, Power BI, Machine Learning, Predictive Modeling, Statistical Analysis
- **Analytical:** Critical Thinking, Problem-Solving, Data Visualization
- **Soft Skills:** Creativity, Communication, Team Collaboration

5. INTERNSHIP EXPERIENCE

Ministry of Post and Telecommunications (July 24 – September 30, 2024)

- Designed and implemented an interactive dashboard for monitoring telecommunication indicators, providing real-time performance insights and driving data-informed decision-making.

6. ADDITIONAL TRAINING

- Power BI Project Experience (February 24 – June 28, 2024):
    1. Data Importation and Cleansing: Imported the Global Super Store dataset into Power BI using Power Query for efficient data manipulation.
    2. DAX Computations: Utilized DAX (Data Analysis Expressions) for advanced data calculations and KPI creation.
    3. Interactive Reporting: Created dashboards to visualize sales growth, profit, and loss.
    4. Analytical Insights: Identified key trends and produced actionable business insights.
- 2023 Data Science Camp in Cambodia (August 7–11, 2023), organized by UNESCO UNITWIN Handong Global University and sponsored by the Ministry of Education, Republic of Korea.
    - Covered topics including Data Science Fundamentals, Machine Learning (clustering, classification, regression), Data Preparation (exploration, transformation, visualization), and Business Analytics (Big Data & AI).
    - Learned multi-platform application development with Dart and Flutter.

7. ACADEMIC PROJECTS

1. Linear Regression Model for Predicting Students' Performance
Outcome: The developed linear regression model demonstrated promising performance on the testing set, highlighting its potential for accurately predicting students' performance based on the various features. This predictive system offers valuable insights for educational institutions seeking to optimize academic outcomes.
2. Loan default risk prediction model
Outcome: Designed to assess the likelihood that a borrower will default on a loan based on income loan amount, credit score, interest rate, and DTIRatio with an accuracy of 88.37%.
3. Disease Prediction using Machine Learning
Project Highlights:

- Exploratory Data Analysis (EDA)
- Model Implementation
- Web Application Development

Outcome: Successfully created a predictive tool that enhances disease diagnostics, proving the effectiveness of machine learning in improving health outcomes.
4. Driver Drowsiness Detection
Technologies: Python, TensorFlow, OpenCV, Hadoop, Arduino

- Multiple models were evaluated, including CNN and ZFNet. Although the Convolutional Neural Network (CNN) model achieved higher accuracy (93.96%), the ZFNet model was selected for deployment due to its superior balance of accuracy, computational efficiency, and feature extraction capabilities.
- The system monitors facial cues such as eyelid closure and yawning to detect drowsiness and triggers timely alerts via Arduino hardware.

Outcome: Deployed ZFNet model achieved 89.59% accuracy in testing, enabling effective early detection of driver fatigue and enhancing road safety.

5. Traffic Sign Detection and Recognition Project
Project Highlights:

- Real-time traffic sign detection using YOLOv8 deep learning framework
- Custom convolutional neural network (CNN) model developed in Keras for traffic sign classification
- Integration of detection and classification pipeline to analyze images and videos
- Visualization of detected signs with bounding boxes and labels for easy interpretation

Technologies: Python, TensorFlow, Keras, PyTorch, Ultralytics YOLOv8, OpenCV
Outcome:
Successfully implemented an end-to-end traffic sign recognition system capable of accurately detecting and classifying various traffic signs. The project demonstrated potential for enhancing autonomous driving and driver assistance systems by providing reliable traffic sign interpretation in real-time.

8. ACHIEVEMENTS & VOLUNTARY INVOLVEMENT

- 24 July 2024 to 30 September 2024

Obtained a Certificate of Internship from the Ministry of Post and Telecommunications

- 11 August 2023:

Received a Certificate of Completion Standard Level 2023 UNESCO UNITWIN Handong Global University and sponsored by the Ministry of Education, Republic of Korea.

- 2 May 2022:

Attained a Certificate for volunteering in the "Online Korean Camp Season 13th," held on April 28th and 29th, 2021, by the International Youth Fellowship.

Role: Artwork Team

- 23 December 2021:

Received a Certificate of Appreciation for exemplary contributions as an organizing committee member in the 2021 JCI Cambodia WE Act projects, including:

JCI Skill Development Trainings: Training PP #6 of Fundamental Skills for Entrepreneurs

- Date: August 20-21, 2021
- Platform: Zoom Video Conferencing
- Topic: Cambodian Tax Compliance from Start to Close
- Role: Project Officer, facilitating training sessions to equip entrepreneurs with essential tax compliance knowledge.

JCI Role Models & JCI Career Entrepreneurship Forum

- Date: November 27, 2021
- Platform: Zoom Video Conferencing
- Roles: Project Chairperson & Master of Ceremony

- 10 December 2021:

Successfully completed The First Aspiration Competition hosted by the Ministry of Education, Youth, and Sport.

- 25 March 2020:

Received a Certificate of Appreciation for volunteering at the Education USA fair in Phnom Penh on March 3, 2020 organized by the U.S. Embassy Phnom Penh.

Role: General Volunteers

- 5 March 2020:

Acknowledged with a Certificate of Appreciation for volunteering in the 8th National Debate Championship organized by SpringBoard4Education in Cambodia.

Role: Media Team

9. LANGUAGES

- Khmer: Native
- English: Fluent
- French: Moderate
- Japanese: Moderate

10. REFERENCES

- Asst. Prof. Dr. PHAUK Sokkhey
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  Head of Master Program of Engineering in Data Science
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