

# ARYO PRADIPTA GEMA

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## CURRENT RESEARCH INTERESTS

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**Primary** : Biomedical NLP, Representation Learning  
**Secondary** : Computational Biology, Argumentation Mining, Generative Adversarial Network

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## PUBLICATIONS

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- **“Argument annotation and analysis using deep learning with attention mechanism in Bahasa Indonesia”**. *Journal of Big Data* (2020) [co-authored with Derwin Suhartono, Suhendro Winton, Theodorus David, Mohamad Ivan Fanany, Aniati Murni Arymurthy]
  - **“Sequence-to-Sequence Learning for Motion-aware Claim Generation”**. *International Journal of Computing (IJC)* (2020) [co-authored with Derwin Suhartono, Suhendro Winton, Theodorus David, Mohamad Ivan Fanany, Aniati Murni Arymurthy]
  - **“Attention-based Argumentation Mining”**. *International Journal of Computational Vision and Robotics* (2018) [co-authored with Derwin Suhartono, Suhendro Winton, Theodorus David, Mohamad Ivan Fanany, Aniati Murni Arymurthy]
  - **“Facial Attractiveness Classification using Deep Learning”**. *The 1st Indonesian Association for Pattern Recognition International Conference (INAPR)* (2018) [co-authored with Ricky Anderson, Suharjito Suharjito, Sani Muhamad Isa]
  - **“Hierarchical Attention Network with XGBoost for Recognizing Insufficiently Supported Arguments”**. *The 11th Multi-disciplinary International Workshop on Artificial Intelligence (MIWAI). Part of the Lecture Notes in Computer Science book series (LNCS, volume 10607)* (2017) [co-authored with Derwin Suhartono, Suhendro Winton, Theodorus David, Mohamad Ivan Fanany, Aniati Murni Arymurthy]
  - **“It Takes Two To Tango: Modification of Siamese Long Short Term Memory Network with Attention Mechanism in Recognizing Argumentative Relations in Persuasive Essay”**. *Procedia Computer Science Vol 116, pages 449-459, presented in 2nd International Conference on Computer Science and Computational Intelligence (ICCSCI)* (2017) [co-authored with Suhendro Winton, Theodorus David, Derwin Suhartono, Muhsin Shodiq, Wikaria Gazali]
  - **“Recurrent Neural Network (RNN) dan Gated Recurrent Unit (GRU)”**. *Articles of Binus University School of Computer Science* (2017). <https://socs.binus.ac.id/2017/02/13/rnn-dan-gru/> [co-authored with Derwin Suhartono]
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## ONGOING PROJECTS

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- **Deep Learning-based Personality Prediction from Bahasa Indonesia Text in Social Media** [with Noptovius Halimawan, Derwin Suhartono]
  - **Leveraging BERT with Summarization for Depression Detection on Social Media** [with David William, Derwin Suhartono]
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## RESEARCH GRANTS

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- **“Penelitian Produk Terapan (PPT) Binus 2017”**. (2017) [with Derwin Suhartono]

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## PROFESSIONAL EXPERIENCES

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### EPIGENE LABS (AI driven Oncology startup)

Paris, France

- Senior Data Scientist October 2021 - Present
  - Develop an internal **source-agnostic big data management end-to-end pipeline**.
  - Maintain the quality of **more than 20 Machine Learning models** in production.
  - Mentor Junior data scientist(s).
  - Work with Head of Data to align Data Science R&D and product timeline.
  - Initiated a regular **inter-departmental research workshop**.
- Data Scientist October 2019 - September 2021
  - Research and Implementation of **Language-Agnostic, Format-Agnostic, and Cancer-Agnostic Data Harmonization Pipeline** using hybrid **Machine Learning** techniques.
  - Maintain the quality of **more than 20 Machine Learning models** in production.
  - Supervise data collection, data labeling, and the formulation of ontology.
  - Supervise Data Science internship projects on Tailored Performance Metrics and Continuous Learning.
  - Contribute to **an open-sourced Computational Biology project** (<https://github.com/epigenelabs/pyComBat>).
  - Directly worked under the C-level to align data science research, DevOps, and product timeline before the arrival of the Head of Data.

### RIMINDER (Deep Learning based HR startup)

Paris, France

- Staff AI Research Scientist February 2019 - October 2019
  - **Supervised day-to-day operations** of the R&D team.
  - Directly worked with the C-level to align R&D and product timelines.
  - Improved in-house NER model by 20% F1 score, block tagger, and other predictive models by 5%.
  - **Double promotion after three months** of the trial period after successfully **improving in-house recommendation and NLU algorithms**.
- AI Research Scientist October 2018 - January 2019
  - Contributed to the research team to further improve profile-to-job **matching/recommendation** using deep learning algorithms.
  - Introduced novel approaches for profile-to-job matching, improved the model by a 10% ROC AUC score.
  - **Held ownership** of multiple of Riminder's most significant projects.
  - Primarily used Python and its libraries (Tensorflow, Pytorch, Keras, NLTK, Pandas, Scikit-learn, Numpy).

### JULO (AI driven fin-tech startup)

Jakarta, Indonesia

- Data Scientist September 2017 - July 2018
  - Developed multiple machine learning solutions, including Automatic individual **credit performance grading, deep learning-based supervised and unsupervised text processing, and recognition**.
  - Worked collaboratively with the Head of Analytics.
  - Mentored junior data scientists and interns.
  - Primarily used Python and its libraries (Tensorflow, Pytorch, H2O, Keras, NLTK, Pandas, Scikit-learn, Numpy).

### BINA NUSANTARA UNIVERSITY (private university)

Jakarta, Indonesia

- Junior Deep Learning Research Scientist March 2017 - July 2018
  - Researched cutting-edge **Deep Learning** and other **Machine Learning** techniques in the **Argumentation Mining** domain.

- Published three papers in two different international conferences and a journal (**ICCS**CI 2017, **MIWAI-SoDeLIA** 2017, **IJCVR** 2018) as of April 2018. Presented one of the papers in a national workshop (**INACL** 2017).
- Best Presenter of ICCSCI 2017.
- Appointed as the **lead researcher** for the team and managed fellow junior researchers' workload.
- Primarily used Python and its libraries (Tensorflow, Pytorch, Keras, NLTK, Pandas, Scikit-learn, Numpy).

#### **RE/MAX 2000** (real-estate company)

**California, USA**

- Freelance Web Developer July 2017 - September 2017
  - Developed 10 core modules for internal **Customer Relationship Management (CRM)** application.
  - Developed 8 core modules for **Image and Descriptive Text Verification** applications.
  - Developed 5 WordPress-based websites.

#### **VOLANTECH** (B2B multi-platform applications start-up)

**Jakarta, Indonesia**

- Senior Software Engineer August 2016 - July 2017
  - Managed and developed multiple high-value projects at the same time.
  - Worked closely with the C-level.
  - Research on **Deep Learning** techniques in conjunction with **Internet of Things** systems.
  - Formulated **competitive programming quizzes** for interview purposes and became the interviewer as well.
  - Primarily used Laravel (PHP), Meteor.js, MEAN stack, Google Firebase, and Python.

#### **ANAKMUDA.NET** (Indonesian youth forum)

**Jakarta, Indonesia**

- Senior Full Stack Developer February 2016 - August 2016
  - First developer hired by the company.
  - Managed and developed multiple big modules of anakmuda.net.
  - Anakmuda.net is merged with Volantech.io
  - Primarily used MEAN stack, Socket.io .

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### ***INVITED TALKS***

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#### **BINA NUSANTARA UNIVERSITY**

**Jakarta, Indonesia**

- Augmenting Intelligence to Drug Discovery April 2021
- Introduction to Artificial Intelligence October 2020

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### ***EDUCATION***

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#### **BINA NUSANTARA UNIVERSITY**

**Jakarta, Indonesia**

- Bachelor of Science in Computer Science September 2014 - August 2018
  - A-Accredited university for Computer Science Undergraduate Program in Indonesia.
  - Concentration: Artificial Intelligence (**current GPA: 3.87/4.00**).
  - Enrolled as a Deep Learning Junior Researcher in Bina Nusantara Enrichment Program.
  - Student of Excellence honor (awarded to students with international and national achievements): 2014, 2015.
  - Binusian Award (awarded to the most achieving graduate) 2018.
- Member of the Debating Club
  - Quarterfinalist in English as Foreign Language Category of United Asian Debating Championship 2015, Indonesia.
  - Champion in Novice Category of Indonesian Varsity English Debate 2015, Indonesia.
  - Semifinalist and 8th Best Speaker of Universitas Padjadjaran Debating Championship 2015.
  - 1st Runner Up and 3rd Best Speaker of Newbies Debating Championship 2014.

- Scholarship Mentor Program
  - Enrolled in a scholarship mentor program (only accepts students with a GPA of  $\geq 3.50$  out of 4.00).
  - Taught and monitored the progress of 10 mentees with a GPA of  $\leq 2$  for one semester.
  - 8 out of 10 mentees got A's in the subjects that I mentored.
- Voluntary Works
  - Initiated flood prevention awareness and mechanism using biopore absorption holes in a local community.

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### ***SKILLS AND INTERESTS***

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- **Languages:** Indonesian – Native, English – Fluent, French – Basic
- **Skills:** Python, Golang, C++, Tensorflow, Pytorch, Scikit-Learn, spaCy, NLTK, Numpy, Scipy, Pandas, H2O, MySQL, PostgreSQL, MongoDB, Azure Cosmos DB
- **Other Interests:** Chess, Parliamentary Debate, Sports, Cooking