

**Barathi Ganesh HB**

**+91-8220789570**

**barathiganesh.hb@gmail.com**

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### **Career Objective**

To become a Cognitive Scientist by getting specialization in the fields of Natural Language Processing, Computer Vision, Speech Processing, Distributed and Parallel Computation.

### **Career Synopsis**

- Current CTO at Arnekt, where our mission is to power the world's smarter business solutions by providing state-of-the-art AI based Cognitive Intelligence as a Service (CIaaS).
- Technically, Cognitive Science Practitioner and Research Scholar (Ph.D.) with 5+ years of good theoretical – practical experience in Linear algebra, Optimization, Probabilistic Graphical Models, Conventional Machine Learning, Deep Learning and Dimensionality Reduction Methods.
- Experiencing first-hand by performing AI powered digital transformation of business solutions using the technologies like Natural Language Processing, Bio-Informatics, Computer Vision, Transfer Learning, Reinforcement Learning, Imitation Learning, Cyber Security, Text Mining, Data Science, Speech Processing, Distributed and Parallel frameworks.

### **Professional Experience**

- Arnekt Solutions Pvt. Ltd  
June 2018 – Present  
**Cognitive Science Practitioner – Chief Technology Officer**  
Concepts – Natural Language Processing, Bio-Informatics, Cyber Security, Reinforcement Learning, Imitation Learning Data Mining, Computer Vision, Conventional Machine Learning and Deep Learning
- Arnekt Solutions Pvt. Ltd  
March 2018 – June 2018  
**Cognitive Science Practitioner – Research Intern**  
Concepts – Natural Language Processing, Bio-Informatics, Cyber Security, Data Mining, Computer Vision, Conventional Machine Learning and Deep Learning
- Amrita Vishwa Vidyapeetham, Computational Engineering and Networking  
August 2017 – March 2018  
**Cognitive Science Practitioner – Research Associate**  
Concepts – Natural Language Processing, Transfer Learning, Conventional Machine Learning and Deep Learning

- Accenture - Artificial Intelligence, Innovation Center  
December 2016 – July 2017  
**Cognitive Science Practitioner – Research Scientist Analyst**  
Concepts – Natural Language Processing, Data Mining, Conventional Machine Learning and Deep Learning
- Tata Consultancy Services - Artificial Intelligence Practice  
September 2015 – December 2016  
**Cognitive Science Practitioner – Assistant System Engineer**  
Concepts – Natural Language Processing, Image Processing, Conventional Machine Learning and Deep Learning
- Tata Consultancy Services - Artificial Intelligence Practice  
June 2015 – August 2015  
**Cognitive Science Practitioner – Intern**  
Concepts – Natural Language Processing, Conventional Machine Learning and Deep Learning

## Education

Amrita Vishwa Vidyapeetham August 2015 – Present

### **Cognitive Science – Pursuing Doctor of Philosophy (PhD - Pursuing)**

- Contextual representation of text and image
- Author Profiling, Author Identification, Information Retrieval and Para-Phrase Identification
- Distributional and Distributed vector representation of the small texts from its context

Amrita Vishwa Vidyapeetham, Coimbatore. July 2013 – July 2015

### **Master of Technology in Computational Engineering and Networks with 79%**

- Sequential Modeling for Spell Correction, Language Identification, POS Tagging and Named Entity Recognition
- Machine Learning based Text Classification, Image Classification, Speech and Speaker Recognition
- Social Media Text Analysis based on Semanticity of Streaming and Batch Data

CSI College of Engineering, Ketti, Ooty, The Nilgiris. September 2009 – April 2013

### **Bachelor of Engineering in Electronic and Communications Engineering with 73%**

- 1-D signals and 2-D image de-noising
- Energy harvesting from Electro Magnetic waves

## Research

### Publications in International Conferences

- **Named Entity Recognition for Indian Languages using Rich Features**, *Forum for Information Retrieval Evaluation*. Bangalore, Karnataka.
- **Author Identification based on Word Distribution in Word Space**, *Advances in Computing, Communications and Informatics (ICACCI)*. Kochi, Kerala
- **Identification and Linking of Twitter Entities**, *#Microposts2015 Making Sense of Microposts: Big things come in small packages*. Florence, Italy.
- **Semantics Relation from Word Embeddings in Higher Dimension**, *SemEval-2016*. San Diego, California.
- **Statistical Semantics in Context Space: Author Profiling**, *PAN CLEF 2016*, Evora, Portugal.
- **Distributional Semantic Representation in Health Care Text Classification**, *FIRE 2016*, Kolkata, India.
- **Conditional Random Fields for Code Mixed Entity Extraction**, *FIRE 2016*, Kolkata, India.
- **Distributional Semantic Representation for Text Classification and Information Extraction**, *FIRE 2016*, Kolkata, India.
- **Vector Space Models to Vector Space Models of Semantics**, *FIRE 2017*, Bangalore, India.
- **Constrained Vector Space Model in Affects in Tweets**, *SemEval 2018*, New Orleans, Louisiana.
- **Global Vectors Representation in Emotion Detection**, *SemEval 2018*, New Orleans, Louisiana.
- **Distributed Representation of Social Media Text for Affects in Tweets**, *SemEval 2018*, New Orleans, Louisiana.
- **Enhanced Distributed Representation of Text using Target Classes for Emoji Prediction**, *SemEval 2018*, New Orleans, Louisiana.
- **Deep Learning for Digital Text Analytics : Sentiment Analysis**, *arXiv*.
- **Distributed Representation using Target Classes: Bag of Tricks for Security and Privacy Analytics**, *IWSPA-AP 2018*, Tempe, AZ.
- **DeepAnti-PhishNet: Applying Deep Neural Networks for Phishing Email Detection**, *IWSPA-AP 2018*, Tempe, AZ.
- **Social Media Analysis based on Semanticity of Streaming and Batch Data**, *arXiv*.

- **Distributed Representation in Information Retrieval**, *FIRE 2017*, Bangalore, India.
- **Overview of the INLI PAN at FIRE-2017 Track on Indian Native Language Identification**, *FIRE 2017*, Bangalore, India.
- **Health Care Text Classification through Class Embeddings**, *SMM4H 2017*, Washington DC, DC, United States.
- **Representation of Target Classes for Text Classification**, *FIRE 2017*, Bangalore, India.
- **Deep Health Care Text Classification**, *arXiv*.

#### Publications in International Journals

- **Supervised Methods for Domain Classification of Tamil Documents**, *ARPAN Journal of Engineering*.
- **Apache Spark a Big Data Analytics Platform for Smart Grid**, *Procedia Technology, Science Direct*.
- **Conditional Monitoring of a Valve in a Reciprocating Compressor using Machine Learning Approaches**, *International Journal of Applied Engineering Research*.

#### Publications in Book Chapter

- **Wavelet Based RTL-SDR Real Time Signal Denoising in GNU Radio**, *Advanced Computing, Networking and Informatics*.

#### Publications in Industry Conferences

- **Social Media Analysis through Cognitive Semantics - Author Profiling: Life Time Learning Method**, *TACTICS. Tata Consultancy Services*, Mumbai, Maharashtra.

#### International Shared Tasks Participation

- Forum for Information Retrieval and Evaluation (**FIRE-2014**): NER - Named Entity Recognition Indian Languages
- Named Entity rEcognition and Linking (**#Micropost2015 NEEL**) : Named Entity Recognition and Linking
- Semantic Evaluation Exercises (**SemEval-2016**) : Semantic Textual Similarity - A Unified Framework for Semantic Processing and Evaluation
- PAN @ Conference and Labs of Evaluation Forum (**PAN-2016**) : Author Profiling

- Forum for Information Retrieval and Evaluation (**FIRE-2016**): Mixed Script Information Retrieval (**MSIR**), Consumer Health Information Search (**CHIS**) and Code Mixed Entity Extraction – Indian Languages (**CMEE – IL**)
- PAN @ Conference and Labs of Evaluation Forum (**PAN-2017**) : Author Profiling
- Social Media Mining for Health Applications (**SMM4H - 2017**) – Adverse Drug Reaction Discovery
- Sentiment Analysis of Indian Language 2018 (**SAIL 2017**)
- Cyber Security Data Mining Competition 2017 (**CDMC 2017**)
- Forum for Information Retrieval and Evaluation (**FIRE-2018**): IRLed – Information Recognition from Legal Documents
- Forum for Information Retrieval and Evaluation (**FIRE-2018**): RusProfiling – Author Profiling for Russian language
- International Workshop on Security and Privacy Analytics 2018 (**IWSPA-AP 2018**)

#### Invited Talks and Honors

- Topic: "**Recent Trends in Text Analytics**", TEQIP sponsored Faculty Development Program on "Research Directions in Data and Text Mining", organized by Government Engineering College, Idukki on January 2016.
- Topic: "**Advanced Analytics in Text Mining and Data Mining**", Tata Consultancy Services sponsored Faculty Development Program on "Text and Data Mining" held at Tata Consultancy Services centre, Kochi on April 2016.
- Topic: "**Computation differs, not Optimization**", TEQIP Sponsored Faculty Development Program on "Contemporary Developments in Optimization Techniques and its Applications", organized by TKM College of Engineering, Kollam on May 2016.
- Topic: "**Web Mining through Data and Text Mining**", Association Inauguration "ORBIT 2K16" conducted by Viswa Jyothi College of Engineering and Technology, Vazhakulam on August 2016.
- Advisory Committee member of International Shared Task "**Detecting Paraphrases in Indian Languages (DPIL)**", Conducted as a part of Forum for Information Retrieval and Evaluation – 2016 by Amrita Vishwa Vidyapeetham University.

- Technical Committee member of International Shared Task “**Machine Translation in Indian Languages (MTIL)**”, Conducted by Amrita Vishwa Vidyapeetham University.
- Advisory Committee member of International Shared Task “**Indian Native Language Identification (INLI)**”, Conducted as a part of Forum for Information Retrieval and Evaluation – 2017 by Amrita Vishwa Vidyapeetham University.
- Workshop on “**Deep Learning for Bioinformatics**”, Conducted by Computation Engineering and Networking, Amrita Vishwa Vidyapeetham 2017.
- Workshop on “**Dynamic Mode Decomposition**”, Conducted by Computation Engineering and Networking, Amrita Vishwa Vidyapeetham 2017.
- Workshop on “**AI (Data mining, Machine learning and Deep learning) techniques for CyberSecurity Use cases**”, Conducted by Computation Engineering and Networking, Amrita Vishwa Vidyapeetham 2017.
- Topic: “**Health Care Application**”, Amrita Research Synergy Day 2018, organized by Amrita School of Medicine - Amrita Vishwa Vidyapeetham, 2018.
- Workshop on “**Deep Learning with Python**”, Conducted by Adi Shankara Institute of Engineering Technology, 2018.
- Topic: “**Riding Through the Neural Network's Path and Mimic your Neuro Cortex**”, Conducted by Computation Engineering and Networking, Amrita Vishwa Vidyapeetham 2018.
- Workshop on “**Mepco Schlenk Engineering College**”, Conducted by Adi Shankara Institute of Engineering Technology, 2018.
- Workshop on “**Natural Language Processing with Deep Learning**”, Conducted by Vidya Academy of Science & Technology, 2018.
- Advisory Committee member of International Shared Task “**Indian Native Language Identification (INLI)**”, Conducted as a part of Forum for Information Retrieval and Evaluation – 2018 by Amrita Vishwa Vidyapeetham University.
- Advisory Committee member of International Shared Task “**Indian Native Language Identification (INLI)**”, Conducted as a part of Forum for Information Retrieval and Evaluation – 2018 by Amrita Vishwa Vidyapeetham University.

- Organizer of International Shared Task “**Information Extractor for Conversational Systems in Indian Languages (IECSIL 2018)**”, Conducted as a part of Forum for Information Retrieval and Evaluation – 2018 by Arnekt Solutions Pvt. Ltd.

### Certifications and Courses

- “**Deep Learning for Natural Language Processing**” course instructed by Richard Socher.
- “**Deep Learning Using Keras**” acquired from Udemy.
- “**Neural Networks and Deep Learning**” acquired from Coursera.
- “**Deep Learning**” acquired from IBM.
- “**Machine Learning Foundation**” acquired from Tata Consultancy Services.
- “**Statistics and R**” acquired from Harvard through edx.
- “**High-Dimensional Data Analysis**” acquired from Harvard through edx.
- “**Data Mining with Weka**” acquired from University of Waikato.
- “**Hadoop Fundamentals**” and “**Spark Fundamentals**” acquired from IBM.

### References

- Dr. K.P Soman – Amrita Vishwa Vidyapeetham, <https://www.amrita.edu/faculty/soman>
- Dr. Anand Kumar M – Amrita Vishwa Vidyapeetham, <https://www.amrita.edu/faculty/anand-kumar>