Shounak Shastri

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Education

- **Vellore Institute of Technology** — Vellore, TN, India
  Doctorate (Ph.D.) in Steganography Algorithms — *Jun.2015 – Dec. 2020*
- **Vellore Institute of Technology** — Vellore, TN, India
  Master of Technology (M.Tech.) in Communication Engineering — *Jun.2013 – May. 2015*
- **K. J. Somaiya College of Engineering** — Mumbai, MH, India
  Bachelor of Engineering (B.E.) in Electronics Engineering — *Aug. 2007 – July. 2012*

Experience

- **VIT–Vellore** — Vellore, TN, IN
  Teaching cum Research Assistant (4 years) — *Jan. 2016 – Jan. 2020*
  - **Teaching**: TensorFlow is an open source software library for numerical computation using data flow graphs; primarily used for training deep learning models. Worked on APIs and performance for training models on Tensor Processing Units (TPU).
  - **Research**: Apache Beam is a unified model for defining both batch and streaming data-parallel processing pipelines, as well as a set of language-specific SDKs for constructing pipelines and runners.

Projects

- **Dual Image RDH with Trinary Encoding**: Devised a dual image steganography algorithm using a novel encoding technique called Trinary Encoding. Published in peer-reviewed international journal with Impact Factor 2.479.
- **PEE based Dual Image RDH**: Modified the common PEE scheme to fit the Dual Image Steganography scenario. Resulted in an 100% increase in the Embedding Capacity. Presented and published in IEEE International Conference.
- **Word Predictor (NLP)**: Implemented a n-gram word predictor in R. https://shounakshastri.github.io/blogposts/
- **Browser Based Object Classification**: Developed browser based object classification using TensorflowJS. Used Transfer Learning to train a MobileNet Neural Network

Skills

- **Programming Languages**: Python, R, Matlab
- **Technologies**: OpenCV, Numpy, Scipy, Tensorflow, Scikit Learn, NLTK, Matplotlib, Trax

Publications and Awards

- **Research Awards** — VIT - Vellore, TN, IN
  2016, 2017

  Awarded for research work carried out on Steganography algorithms.
- **Best Paper Award** — VITEEE
  IEEE International Conference, Vellore — *2019*
- **Journal Publications**

  - : S. Shastri and V. Thanikaiselvan, "Dual image reversible data hiding using trinary assignment and centre folding strategy with low distortion," J. Vis. Commun. Image Represent., vol. 61, pp. 130–140, May 2019. DOI: https://doi.org/10.1016/j.jvcir.2019.03.022
  - : V. Thanikaiselvan, S. Shastri, and S. Ahmad, "Information hiding: Steganography," Stud. Comput. Intell., vol. 660, pp. 65–91, 2017. DOI: https://doi.org/10.1007/978-3-319-44790-2_4
  - : S. Shastri and V. Thanikaiselvan, "PVO based Reversible Data Hiding with improved embedding capacity and security," Indian J. Sci. Technol., vol. 9, no. 5, 2016.