Shounak Shastri

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SUMMARY

I am a Ph.D. researcher trained in Image Processing, Information Security and familiar with Machine Learning (ML) and Deep Learning (DL) concepts. I have strong communication abilities developed from teaching and mentorship experience. I am currently looking for Data Scientist positions involving Research and Development (R&D) in the fields of Machine Learning and Artificial Intelligence which would help me grow by learning new technologies in the process. I have special expertise in the following areas:

- Image Processing
- Computer Vision
- Information Security
- Data Science
- Research and Development
- Machine Learning

EDUCATION

Vellore Institute of Technology Vellore, TN
Ph.D., Steganography Algorithms (Doctorate) *Expected Completion: 2020*

Vellore Institute of Technology Vellore, TN
M. Tech in Communication Engineering (Masters) *May 2015*

K. J. Somaiya College of Engineering Mumbai, MH
B. E. in Electronics (Bachelors) *May 2012*

RESEARCH EXPERIENCE

VIT Vellore, School of Electronics Engineering
Ph. D. Research Scholar *June 2015 – Present*

- Analysed and evaluated legacy and state-of-the-art Steganography algorithms in a team which resulted in 1 review article. (*Link in the Publications section*)
- Developed Data Hiding algorithms which resulted in 1 publication in an International conference and 2 publications in top-tier peer-reviewed journals (*Link in the Publications section*).
- Delivered talks on Basic Cryptography and Steganography algorithms to an audience of over 60 undergraduate students arranged by the local IEEE Students Chapter.
- Served as a reviewer for the AIIPCC 2019 (International Conference)

VIT Vellore, School of Electronics Engineering
M. Tech *July 2013 – May 2015*

- Formulated a Watermarking algorithm which resulted in 1 publication in a peer reviewed journal indexed in the Scopus database.
- Presented work at 3 national level scientific gatherings.

WORK EXPERIENCE

VIT Vellore, School of Electronics Engineering
Teaching cum Research Assistant *January 2016 – January 2020* ***(4 yrs)***

- Taught and facilitated classroom and laboratory sessions for undergraduate students in Digital Communication Systems, Networking and Biomedical Image Processing.
- Mentored and led more than 30 students in prototyping and completion of their Bachelor and Master degree projects into presentable and publishable products.
- Used data processing to gain insights about student development and improve student-faculty interactions.

PROJECTS

Dual Image Reversible Data Hiding using Rhombus Prediction (Steganography)

- Modified the basic Rhombus Prediction scheme to fit in the Dual Image Reversible Data Hiding scenario resulting in 100% increase in the embedding capacity.
- Resulted in 1 publication in an International Conference. *(Link in the Publications section)*

Dual Image Reversible Data Hiding using Trinary Assignment (Steganography)

- Developed a novel Dual Image Data Hiding scheme which encoded the secret data into trinary numbers.
- This resulted in an increase of approx. 8.5% in the average PSNR values when compared with other state-of-the-art algorithms.
- This work was published in a SCI journal with an Impact Factor of 2.479. *(Link in the Publications section)*

You can see some of my personal projects at shounakshastri.github.io

TECHNICAL SKILLS

- Well versed with Matlab, R and Python programming.
- Well versed with Machine Learning, Deep Learning and Visualization packages like Scikit Learn, TensorFlow, NLTK, Matplotlib, Seaborn, etc.

PUBLICATIONS

[1] **S. Shastri** and V. Thanikaiselvan, "Dual Image Reversible Data Hiding Using Rhombus Prediction," in *2019 International Conference on Vision Towards Emerging Trends in Communication and Networking (ViTECoN)*, 2019, pp. 1–4. DOI: 10.1109/ViTECoN.2019.8899667

[2] **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

[3] 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

[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.