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Leveraging image noise: source camera identification and increased robustness of convolutional neural networks

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DOI:

[10.33612/diss.843513794](https://doi.org/10.33612/diss.843513794)

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Document Version

Publisher's PDF, also known as Version of record

Publication date:

2023

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Bennabhaktula, G. S. (2023). *Leveraging image noise: source camera identification and increased robustness of convolutional neural networks*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.843513794>

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Curriculum Vitae

Guru Swaroop Bennabhaktula was born in Visakhapatnam, India on 13th August 1991. He completed his Bachelor of Science Honours (B.Sc. Hons) in Mathematics in 2012, Master of Science (M.Sc.) in Mathematics in 2014, and Master of Technology (M.Tech) in Computer Science in 2016 from Sri Sathya Sai Institute of Higher Learning, India. He was awarded the Justice P.N. Bhagwati gold medal for standing first in the M.Tech Computer Science programme. During his studies, he participated in several self-reliance programs and societal outreach activities organized by the Sri Sathya Sai Institute of Higher Learning with the spirit of Love All Serve All & Help Ever Hurt Never.

Thereafter, in 2016 he joined Applied Materials India Pvt. Ltd. as a software engineer. He was part of a team of computer vision experts working on identifying the defects at nanometer resolution in the semiconductor during the wafer fabrication process. Played several key roles in driving a new project from its ideation to deployment. In this project, a deep-learning-based unsupervised image clustering algorithm was developed to group visually similar images of defects. He received awards in Coding and Machine Learning Hackathons held across the company.

Subsequently, he started his PhD journey at the University of Groningen in the Netherlands in 2019. He worked on the EU project 4NSEEK to help fight against child sexual abuse under the supervision of Dr George Azzopardi and Prof. Dr Dimka Karastoyanova. Thereafter in 2021, he moved to the University of León, Spain, and under the supervision of Prof. Dr Enrique Alegre worked on Perceptual Image Hashing. He also developed techniques to make convolutional neural networks robust to out-of-distribution test data. He enjoys working on societal problems for the welfare of society.