



# Thomas Valerrian Pasca Santhappan

## Curriculum Vitae

### Education

- From 2013 **Doctor of Philosophy in Computer Science and Engineering**,  
Indian Institute of Technology (IIT) Hyderabad, India  
CGPA – 8.5/10.  
Dissertation Title : LTE Wi-Fi Radio Level Integration  
Advisor : Dr. Bheemarjuna Reddy Tamma
- 2011–2013 **Master of Engineering in Computer and Communication**,  
Sri Sivasubramaniya Nadar (SSN) College of Engineering, Chennai, India  
CGPA – 8.85/10.  
Thesis Topic : Energy efficient sleep/wake scheduling of stations in Wireless Networks  
Advisors : Dr. Premkumar Karumbu and Asst Prof. Srividhya
- 2007–2011 **Bachelor of Technology in Information Technology**,  
K.S.Rangasamy College of Technology, Tiruchengode, India  
CGPA – 9.1/10.  
Project Title : Virtual Classroom using Wi-Fi

### Prototype Demos

- 1 **Thomas Valerrian Pasca S**, Himank Gupta, Sumanta Patro, Bheemarjuna Reddy Tamma and Antony Franklin, "LTE-Wi-Fi Radio Level Integration at RLC Layer: A Demo of LWIR", in Proc. of COMSNETS, Jan 2018, Bangalore, India. **Best Research Demo**
- 2 **Thomas Valerrian Pasca S**, Sumanta Patro, Bheemarjuna Reddy Tamma and Antony Franklin, "Tightly Coupled LTE Wi-Fi Radio Access Networks: A Demo of LWIP", in Proc. of COMSNETS, Jan 2017, Bangalore, India.

### Patents

- 1 **Thomas Valerrian Pasca Santhappan**, Bheemarjuna Reddy Tamma, and Antony Franklin, "Traffic steering in aggregated LTE-Wi-Fi Networks", India Patent No: 4705/CHE/2015, (Provisional Filing: 04.09.2015). Patent Pending.

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- 2 Sreekanth Dama, **Thomas Valerrian Pasca Santhappan**, Sathya Vanlin, K. Kuchi, B. R. Tamma, A Novel RACH Mechanism for Dense Cellular-IoT Deployments, Provisional Filing: 06.11.2015, Patent Pending (India).
- 3 Sreekanth Dama, **Thomas Valerrian Pasca Santhappan**, Abhinav Kumar, Bheemarjuna Reddy Tamma, Kiran Kuchi "Method for accessing a channel in wireless communication network", US Patent No: 689/CHE/2015, Patent Pending.
- 4 Antony Franklin, Bheemarjuna Reddy Tamma, Prashant Sharma and **Thomas Valerrian Pasca Santhappan**, "Method and System for LTE WLAN Integration at RLC Layer (LWIR) with Integrated LTE Wi-Fi Scheduler" Application Number: 201641025740 (Indian Patent Office).

## Journal Publications

- 1 **Thomas Valerrian Pasca S**, Sumanta Patro, Bheemarjuna Reddy Tamma, and Antony Franklin, "Network Coordination Function for Uplink Traffic Steering in Tightly Coupled LTE Wi-Fi Networks," in Elsevier Computer Networks, 2017.
- 2 Sreekanth Dama, **Thomas Valerrian Pasca S**, Vanlin Sathya and Kiran Kuchi, "A Feasible Cellular Internet of Things: Enabling Edge Computing and the IoT in Dense Futuristic Cellular Networks," in IEEE Consumer Electronics Magazine, vol. 6, no. 1, pp. 66-72, Jan. 2017.
- 3 Anil Kumar Rangiseti, **Thomas Valerrian Pasca S**. and Bheemarjuna Reddy Tamma, "QoS Aware load balance in software defined LTE networks", Elsevier Computer Communications, vol. 97, pp. 52-71, 2017.

## Conference Publications

- 1 Sumanta Patro, **Thomas Valerrian Pasca S**, Bheemarjuna Reddy Tamma and Antony Franklin A, "INCARNATE: An Interference Aware Spatial Scheme for Tightly Coupled LTE-Wi-Fi Networks" in Proc. of COMSNETS, January 2018, Bangalore, India
- 2 **Thomas Valerrian Pasca S**, Sumanta Patro, Bheemarjuna Reddy Tamma and Antony Franklin A, "A Real-Time Performance Evaluation of Tightly Coupled LTE Wi-Fi Radio Access Networks" in Proc. of IEEE ANTS, December 2017, Odisha, India (**Won Best Paper Award - 2<sup>nd</sup> position**)
- 3 **Thomas Valerrian Pasca S**, Adharsh Srivats Rangarajan, Bheemarjuna Reddy Tamma and Antony Franklin A, "Optimal Placement of Colocated and Non-Colocated LWA Nodes in Dense Deployments" in Proc. of IEEE ANTS, December 2017, Odisha, India
- 4 **Thomas Valerrian Pasca S**, Bheemarjuna Reddy Tamma and Antony Franklin A, "VISIBLE: Virtual Congestion Control with Boost ACKs for Packet Level Steering in LWIP Networks" in Proc. of IEEE GLOBECOM, December 2017, Singapore
- 5 **Thomas Valerrian Pasca S**, Himank Gupta, Bheemarjuna Reddy Tamma and Antony Franklin A, "PRECISE: Power Aware Dynamic Traffic Steering in Tightly Coupled LTE Wi-Fi Networks" in Proc. of IEEE PIMRC, October 2017, Montreal, Canada

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- 6 **Thomas Valerrian Pasca S**, Siva sairam prasad Kodali, Kotaro Kataoka, "AMPS: Application Aware Multipath Flow Routing Using Machine Learning in SDN" in Proc. of NCC, March 2017, Chennai, India
- 7 **Thomas Valerrian Pasca S**, Amogh PC, Debashisha Mishra, Nagamani Dheeravath, Anil kumar Rangiseti, Bheemarjuna Reddy Tamma, Antony Franklin A, "Architectural Challenges and Solutions for Collocated LWIP - A Network Layer Perspective" in Proc. of NCC, March 2017, Chennai, India
- 8 **Thomas Valerrian Pasca S**, Badrinaaraayanan Akilesh, Arjun V Anand and Bheemarjuna Reddy, "A NS-3 Module for LTE UE energy Consumption" in Proc. of IEEE ANTS, November 2016, Bangalore, India
- 9 Prasanth Sharma, Ajay Brahmakshatriya, **Thomas Valerrian Pasca S**, Bheemarjuna Reddy and Antony Franklin, "LWIR: LTE-WLAN Integration at RLC Layer with Virtual WLAN Scheduler for Efficient Aggregation" in Proc. of IEEE GLOBECOM, December 2016, Washington, DC USA
- 10 Sreekanth Dama, **Thomas Valerrian Pasca S**, Vanlin Sathya, Kiran Kuchi, "A Novel RACH Mechanism for Dense Cellular-IoT Deployments" in Proc. of IEEE WCNC 2016, Doha, Qatar
- 11 Prasanth Sharma, **Thomas Valerrian Pasca S**, Naveen Kamath and Bheemarjuna Reddy Tamma, "Velocity Based Dynamic Flow Mobility in Converged LTE/Wi-Fi Networks " in Proc. of NCC, March 2016, IIT Guwahati, India
- 12 **Thomas Valerrian Pasca S**, Srividya, and K. Premkumar, "Energy Efficient Sleep/Wake Scheduling of Stations in Wireless Networks", in Proc. of ICCSP, April 2013, Chennai, India

## Honors

- 2018 Best Research Demo award for the demo titled "LTE Wi-Fi Radio Level Integration at RLC layer"
- 2017 Best paper award 2<sup>nd</sup> position in IEEE ANTS conference for the paper "A Real Time Performance Evaluation of Tightly Coupled LTE Wi-Fi Networks"
- 2017 IEEE comsoc Travel Grant for attending IEEE Globecom conference for the paper titled "VISIBLE: Virtual Congestion Control with Boost ACKs for Packet Level Steering in LWIP Networks"
- 2015 Best poster award in research meet at Indian Institute of Technology Hyderabad
- 2013 University Rank holder, secured 6<sup>th</sup> rank in Master of Engineering (Anna University, Chennai)
- 2012 Received Institute silver medal for securing 2<sup>nd</sup> rank in Master of Engineering during academic year 2011-2012
- 2011 Received best project award in B.Tech for the project titled "VIRTUAL CLASSROOM USING WI-FI"

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## Industrial Experience

- Internship 2015 Worked as research intern at EURECOM, Sophia Antipolis, France for learning and developing LTE open source prototype (OpenAirInterface).
- Internship 2017 Worked as research intern at WiSigNetworks (Startup), for developing Narrowband-IoT product.

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## Open Source Contributions

- NS3 Contribution Developed LTE UE energy module in NS-3. Find the source code available in github.
- Open Air Interface Developed LWIP module in open air interface and made commercial UE to support LWIP with the developed module. The source code is available in my github.
- Application Developed android applications for network performance measurement.

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## Extra Curricular Activities

- Athletics Successfully completed 10km and Half marathon (21km) at various club runs (Airtel Hyderabad Marathon, Heritage Run, Purple run) Hyderabad.

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## References

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Associate Professor,  
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**Dr. Kiran Kumar Kuchi,**  
Associate Professor,  
Department of Electrical Engineering, IIT Hyderabad, India.

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**Dr. Antony Franklin,**  
Assistant Professor,  
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