Prakki Sai Rama Sridatta

Senior Bioinformatician

National Centre for Infectious Diseases

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Education

2010–2012	**Nanyang Technological University (NTU), Singapore**, *Master of Science*, *Bioinformatics*.
2006–2010	**Bharath University, Chennai, India**, *Bachelor of Technology*, *Bioinformatics*.

Work Experience

Jul 2019 – Present

Senior Bioinformatician, National Centre for Infectious Diseases, Tan Tock Seng Hospital, Singapore.

- Preparation of bacterial genome sequence data, preprocess the datasets, data analysis, reporting to infection control at Tan Tock Seng Hospital, Singapore
- Writing programming scripts (using R/Bash/PERL) to analyse sequence data
- Preparation of appropriate documentation and generating analysis reports and summary dashboards (using Github and R Markdown)
- Leverage on the HPC servers for data storage and managing data transfers with collaborators
- Developing light-weight tools (developed and published an R package **"CPgeneProfiler"**)
- Automate and optimize clinical bioinformatics processes using workflow management systems

Supervisor: Dr. Ng Oon Tek, (Senior Consultant, National Center for Infectious Diseases)

Aug 2017 – Jun 2019

Research Associate - External Staff at NCID, Saw Swee Hock School Of Public Health, NUS, Singapore.

- Development of standard operating procedures for the bioinformatics data analysis
- Bacterial Genome Data and Metadata management and data transfer
- Training peer researchers in the work group to achieve insightful results
- Analyse High Performance Computing (HPC) system computational performance, investigate and resolve performance issues
- Participate in the preparation and presentation of peer-reviewed articles, posters, reports and grants. **Refer Poster Presentations: 1-3 at European ECCMID conference**

Supervisor: Dr. Ng Oon Tek, (Senior Consultant, National Center for Infectious Diseases)

Jun 2012 – Dec 2016

Bioinformatics Engineer, Temasek Life Sciences Laboratory, NUS, Singapore.

- Published **"The Asian Seabass Genome Project"**, spearheaded by the Reproductive Genomics Group initiated in 2012
- Published Asian Seabass Transcriptome
- Experience working on genomics data of other popular aquaculture fishes Tilapia, Arowana

Supervisor: Professor Dr. Laszlo Orban (Senior Principal Investigator)

Sep 2011 – Apr 2012	**Research Intern**, Genome Institute of Singapore, A*STAR, Singapore. ○ Computational analysis of algal organism **Botryococcus** genomes and transcriptomes **Supervisor: Dr. Jianhua Liu** (Senior Principal Investigator)

Technical Skills & Abilities

Programming:	PERL, UNIX/Linux, Shell Scripting, AWK, SED
Server Skills:	High Performance Computing (HPC), Data management
Statistical Computing:	R programming (comfortable writing light-weight packages, using tidyverse, ggplot2 etc)
Applications:	MS Word, MS Excel, MS Powerpoint, Vi, LaTeX, LibreOffice
Operating systems:	Windows, Ubuntu, CentOS
Version Control:	Github (https://github.com/ramadatta)
Data Visualizations:	R Flexdashboard

Certifications

Data Analysis and Statistical Inference, *authorized by Duke University*.

The Data Scientist's Toolbox, *authorized by John Hopkins University*.

Data Wrangling in R, *from Linkedin Learning*.

Data Visualization in R with ggplot2, *from Linkedin Learning*.

Big Data Systems Management, *Temasek Polytechnic, Singapore*.

Tools for Data Science, *authorized by IBM*.

Mastering Data Analysis in Excel, *authorized by Duke University*.

R Programming, *authorized by John Hopkins University*.

Bioinformatics: Life Sciences on Your Computer, *authorized by John Hopkins University*.

Hands-on SAS Base, Advanced, Graph and Statistics , *SCRI, A*star, Singapore*.

Other Contributions

Biostar member, *(user profile: Prakki Rama)*.

Web Blogging, *(A search for solutions)*.

Publish onscreen tutorials, *(Beginner Bioinformatics commands, Genome alignment using BRIG tool)*.

Writing computational tools and maintaining Github repositories, *(user profile: ramadatta)*.

Developing R shiny apps and packages, *(RoaryPCA, gamR, CPgeneProfiler)*.

Data wrangling and visualization from Tidytuesday project, *(Analysis of Nurses dataset)*.

Awards

2009	**Best performer award for poster presentation at National Symposium on "Insilico Drug Design against Leishmaniasis"**, SRM University, Chennai, India.

Manuscripts in progress

- **Sai Rama Sridatta Prakki**, Oon Tek Ng et al. "Nosocomial infections within a tertiary-care hospital at Singapore caused by Pseudomonas aeruginosa bla_{NDM-1} ST308 clone linked to Environmental isolates" Unpublished manuscript, National Centre for Infectious Diseases, Singapore.

International Peer Reviewed Publications

- Kalisvar Marimuthu, Indumathi Venkatachalam, **Sai Rama Sridatta Prakki**, Oon Tek Ng et al. "Whole Genome Sequencing Reveals Hidden Transmission of Carbapenemase-producing Enterobacterales: A retrospective cohort study" Nature communications (2022), in press.

- **Sridatta, Prakki Sai Rama, et al."CPgeneProfiler: A lightweight R package to profile the Carbapenamase genes from genome assemblies."** Journal of Open Source Software 5.54 (2020): 2473.

- Chen, Yahua, Kalisvar Marimuthu, Jeanette Teo, Indumathi Venkatachalam, Benjamin Pei Zhi Cherng, Liang De Wang, **Sai Rama Sridatta Prakki** et al. "Acquisition of Plasmid with Carbapenem-Resistance Gene blaKPC2 in Hypervirulent Klebsiella pneumoniae, Singapore." Emerging infectious diseases 26, no. 3 (2020): 549.

- Octavia, Sophie, Marimuthu Kalisvar, Indumathi Venkatachalam, Oon Tek Ng, Weizhen Xu, **Prakki Sai Rama Sridatta**, Yi Fa Ong et al. **"Klebsiella pneumoniae and Klebsiella quasipneumoniae define the population structure of bla KPC-2 Klebsiella: a 5 year retrospective genomic study in Singapore."** Journal of Antimicrobial Chemotherapy 74, no. 11 (2019): 3205-3210.

- Komissarov A, Vij S, Yurchenko A, Trifonov V, Thevasagayam N, Saju J, **Sridatta P**, Purushothaman K, Graphodatsky A, Orban L, Kuznetsova I. **B chromosomes of the Asian seabass (Lates calcarifer) contribute to genome variations at the level of individuals and populations**. Genes. 2018 Sep 20;9(10):464.

- Shen X, Ngoh SY, Thevasagayam NM, **Prakki SR**, Bhandare P, Tan AW, Tan GQ, Singh S, Phua NC, Vij S, Orban L. **BAC-pool sequencing and analysis confirms growth-associated QTLs in the Asian seabass genome**. Scientific reports. 2016 Nov 8;6:36647.

- Vij S, Kuhl H, Kuznetsova IS, Komissarov A, Yurchenko AA, Van Heusden P, Singh S, Thevasagayam NM, **Prakki SR**, Purushothaman K, Saju JM. **Chromosomal-level assembly of the Asian seabass genome using long sequence reads and multi-layered scaffolding.** PLoS genetics. 2016 Apr 15;12(4):e1005954.

- Ngoh SY, Tan D, Shen X, Kathiresan P, Jiang J, Liew WC, Thevasagayam NM, Kwan HY, Saju JM, **Prakki SR**, Goh CH. **Nutrigenomic and nutritional analyses reveal the effects of pelleted feeds on Asian seabass (Lates calcarifer).** PloS one. 2015 Dec 22;10(12):e0145456.

- Thevasagayam NM, **Sridatta PS**, Jiang J, Tong A, Saju JM, Kathiresan P, Kwan HY, Ngoh SY, Liew WC, Kuznetsova IS, Shen X. **Transcriptome survey of a marine food fish: Asian seabass (Lates calcarifer).** Journal of Marine Science and Engineering. 2015 Jun 2;3(2):382-400.

- Kuznetsova IS, Thevasagayam NM, **Sridatta PS**, Komissarov AS, Saju JM, Ngoh SY, Jiang J, Shen X, Orban L. **Primary analysis of repeat elements of the Asian seabass (Lates calcarifer) transcriptome and genome.** Frontiers in genetics. 2014 Jul 25;5:223.

- Shen XY, Kwan HY, Thevasagayam NM, **Prakki SR**, Kuznetsova IS, Ngoh SY, Lim Z, Feng F, Chang A, Orban L. **The first transcriptome and genetic linkage map for Asian arowana.** Molecular ecology resources. 2014 May;14(3):622-35.

Poster Presentations at International Conferences

- Weizhen Xu, **Sai Rama Sridatta Prakki**, Natascha May Thevasagayam, Liang De Wang, Wei Xin Khong, Jia Jun Lee, Victor Yi Fa Ong, Kalisvar Marimuthu, Jeanette Teo, Indumathi Venkatachalam, Oon Tek Ng **Tracking plasmid-mediated horizontal gene transmission of blaNDM across Enterobacteriaceae:**

whole-genome analysis of an international multi-centre dataset at European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 2019

○ Glorijoy Shi En Tan, Brenda Ang, Eli Perencevich, Jia Qi Kum, Bee Fong Poh, **Sai Rama Sridatta Prakki**, Liang De Wang, Victor Yi Fa Ong, Natascha May Thevasagayam, Weizhen Xu, Indumathi Venkatachalam, Jeanette Teo, Oon Tek Ng, Kalisvar Marimuthu, **Patient-level risk factors for transmission of carbapenemase -producing Enterobacticeae (CPE) in an endemic setting: Findings from contact tracing and whole genome sequencing (WGS) over 8 years** at European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Amsterdam, Netherlands, 2019

○ Kalisvar Marimuthu, Partha Pratim De, Bee Fong Poh, **Sai Rama Sridatta Prakki**, Weizhen Xu, Natascha May Thevasagayam, Victor Yi Fa Ong, Indumathi Venkatachalam, Jeanette Teo, Prabha U. Krishnan, Brenda Ang, Oon Tek Ng. **Population whole-genome sequencing uncovers plasmid-mediated NDM persistence despite high compliance to World Health Organisation (WHO)'s carbapenem-resistant Enterobacteriaceae (CRE) guideline** at European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), Madrid, Spain, 2018

○ **Sai Rama Sridatta Prakki**, Natascha May Thevasagayam, Junhui Jiang, Jolly M. Saju, Hsiao Yuen Kwan, Woei Chang Liew, Purushothaman Kathiresan, Jun Hong Xia, Gen Hua Yue, Si Lok, Laszlo Orban, **Improved Assembly of the Asian Seabass Transcriptome towards obtaining Full-Length Coding Sequences** at Plant and Animal Genome (PAG) Asia Conference, Singapore, 2014

○ Woei Chang Liew, Natascha May Thevasagayam, **Sai Rama Sridatta Prakki**, Jolly M. Saju, Xueyan Shen, Si Yan Ngoh, Junhui Jiang, Laszlo Orban, **Sequencing and de novo Assembly of the Mozambique Tilapia Transcriptome** at Plant and Animal Genome (PAG) Asia Conference, Singapore, 2014

○ Xueyan Shen, Hsiao Yuen Kwan, Natascha May Thevasagayam, **Sai Rama Sridatta Prakki**, Inna Kuznetcova, Zijie Lim, Felicia Feng, Alex Chang, Laszlo Orban, **Transcriptome Characterization and Construction of a First Generation Genetic Linkage Map for Asian Arowana (Scleropages formosus)** at Plant and Animal Genome (PAG) Asia Conference, Singapore, 2014

○ Natascha May Thevasagayam, **Sai Rama Sridatta Prakki**, Junhui Jiang, Jolly M. Saju, Hsiao Yuen Kwan,Woei Chang Liew, Purushothaman Kathiresan, Jun Hong Xia, Gen Hua Yue, Laszlo Orban, **Sequencing and Assembly of the Asian seabass Transcriptome** in at Plant and Animal Genome (PAG) Conference, San Diego, California, 2013

▬▬▬ References

Dr. Laszlo Orban, (Project leader and Adjunct Professor),
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Dr. Purushothaman Kathiresan, (Postdoctoral fellow)
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Norwegian University of Life Sciences (NMBU)
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