

Santhosh Kumar Geetha Virupakshappa

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Personal details and contact information

Full name: Santhosh Kumar Geetha Virupakshappa

Short name: Santhosh Kumar

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Registrations

Medical council	Registration number	Date of registration
General medical council, United Kingdom	7777423	22/04/2020
Helsedirektoratet, Norway	10079839	01/09/2018
Karnataka medical council	95203	29/03/2012

Memberships

Name of society	Membership type
Royal college of Radiologists, United Kingdom	Fellow
Alumni of Bangalore medical college, Bangalore, India	Life member
British medical association, United Kingdom	Standard member
European society of radiology, Vienna, Austria	Full member
Indian Radiological & Imaging Association, India	Life member
Society for Imaging Informatics in Medicine, United States	Corresponding member

Qualifications

Name	Date obtained
Fellowship of the Royal College of Radiologists (FRCR)	22/11/2019
Masters in Medicine (MMed), National university of Singalore, Singapore	22/11/2019
European Diploma in Radiology (EDiR), Vienna, Austria	28/02/2018
Doctor of medicine (MD) - Radiodiagnosis, India	25/04/2017
Bachelor degree in medicine (MBBS), India	31/03/2012
M.Sc. Data science in health and social care, University of Edinburgh, United Kingdom	Currently studying

Employment history 1 - posts held

Locum consultant Radiologist

Institute name: North Cumbria integrated care

Location: Carlisle, United Kingdom

Dates: 04/11/2022 - current

Employment Type: part-time (87.5% of whole-time equivalent)

Name of the supervisor: Louise Dodgeon

Level of supervision: Independent

Description:

I am currently working as a consultant radiologist in North Cumbria NHS trust along with part-time studying at the University of Edinburgh for my master's degree in Health data science.

My current role involves general radiology work along with a subspeciality interest in head & neck and colorectal imaging. My weekly schedule involves rotations in outpatient and inpatient reporting, ultrasound scans and active participation in multidisciplinary meetings. Our hot seat reporting involves reporting acute and inpatient scans, informing critical or unexpected findings over the phone, providing second opinions, answering general radiology queries over the phone, and arranging interventional procedures.

The modalities I am involved in are plain radiographs, CT, MRI, and ultrasound scans. During the MDT discussions, I can interpret PETCT images and other nuclear medicine imaging and am also able to provide basic guidance to clinicians on interventional procedures. If I am uncertain, I do not hesitate to take advice from my colleagues.

Other related clinical activities involve justifications of radiology scans, replying to advice & guidance portals, participation in REAL meetings, morbidity and mortality meetings, interaction with radiographers and taking part in regular teaching activities. The non-clinical activities, I am involving are departmental meetings, assistance in Rota management and personal appraisal preparations.

Consultant Radiologist

Institute name: Sykehuset Telemark
Location: Notodden, Telemark, Norway
Dates: 10/12/2018 to 31/10/2020
Employment Type: Full time
Name of the supervisor: Kristy Børnes
Level of supervision: Independent

Description:

As a full-time radiologist, I worked in a district general hospital in Norway. The usual work involves reporting CT, ultrasound, radiographs, and fluoroscopy on routine as well as emergency services. I was also in regular on-call rotations and special duties during the covid-19 pandemic. I regularly performed basic interventional procedures like FNAC, image-guided drainage and rarely biopsies. The workload was low due to the remote area and low population density.

I was leading morning clinico-radiology meetings. The meetings were carried out three times a week, two with surgeons & orthopaedics and one with medicine consultants per week.

The other duties involved teaching the specialist trainees with teaching and verifying their reports, involvement in departmental meetings and supervising & co-ordinate with radiographers with the daily workload.

The written and verbal communication was in the Norwegian language, and I was quite competent in general as well as the clinical type of communication.

Exchange fellow in abdominal imaging

Institute name: Addenbrooke's hospital, University of Cambridge
Location: Cambridge, United Kingdom
Dates: 25/06/2018 to 24/09/2018
Employment Type: Observer
Name of the supervisor: Edmund Godfrey
Level of supervision: Observation only

Description:

In early 2018, I was selected for the exchange fellowships offered by the European Society of Radiology. I was posted in Addenbrooke's hospitals, the University of Cambridge under the mentorship of Edmund Godfrey, a consultant radiologist.

This fellowship was my first exposure to NHS as also a western system of healthcare. I shadowed my mentor in his clinical activities including MDT meetings where I could see how a safe, appropriate, best treatment plan for the patient's disease conditions was planned in a collaborative approach. I also witnessed how active role a radiologist plays in clinical management flow and reflected on how it is different from the work in my home country.

I was thought with mini-IPX, teaching files and participation in teaching sessions with other trainees. I helped my mentor in drafting scientific articles.

As I was not holding GMC registration at the time, I was not allowed to take up any clinical activities.

This fellowship paved my way to pursue FRCR and my dream to work in NHS as a consultant.

Consultant Radiologist

Institute name: Radnest imaging solutions

Location: Kengeri, Bangalore, India

Dates: 15/12/2017 to 29/05/2018

Employment Type: Full time

Name of the supervisor: Puttanna Gowda

Level of supervision: Independent

Description:

As a consultant in a private diagnostic centre, I was reporting routine CT, MRI and radiographs and performing ultrasound scans. The emergency scans were to be reported from remote workstations. I was also responsible for coordinating with radiographers in managing the radiology workflow.

Senior Resident

Institute name: RajaRajeswari Medical College and Hospital

Location: Mysore Rd, Kambipura, Bangalore, Karnataka, India

Dates: 11/09/2017 to 30/11/2017

Employment Type: Full time

Name of the supervisor: Praveen GU

Level of supervision: Indirect supervision

Description:

In this teaching hospital, as a senior resident my key role was to guide the junior residents in their day-to-day work and undertake informal and formal teaching sessions.

I was the main radiologist in breast imaging where I introduced standard lexicon reporting and recommending biopsy in a breast mass instead of FNCA which was the customary practice in that hospital. The changes I brought were well-recognized by the head of the department and the general surgeons. As there was no dedicated breast screening unit, I strived towards the development of a screening pathway, however, there was a lack of breast surgeons. We had to refer the patients to specialized centres for further management.

I was taking part in the departmental meetings where the clinical and non-clinical issues were discussed regularly.

Senior Resident

Institute name: Tata memorial hospital

Location: Dr Ernest Borges Rd, Parel East, Parel, Mumbai, India

Dates: 01/07/2016 to 31/08/2017

Employment Type: Full time

Name of the supervisor: M H Thakur

Level of supervision: Indirect supervision

Description:

As part of my further training, I was posted as a senior resident after the successful completion of the final radiology examination. The clinical work carried out was reporting of acute and outpatient scans with indirect supervision. All the cross-sectional reports generated were verified by our consultants. I was authorized to verify radiographs, fluoroscopic procedures and ultrasound scans.

I was regularly attending joint clinics which are similar to MDT meetings. I was shadowing and taking part in the joint clinics with my professors.

As a senior resident, I was involved in teaching (formal presentations, journal clubs and case discussions), research and taking other non-clinical responsibilities like aiding in departmental works.

Junior Resident

Institute name: Tata memorial hospital

Location: Dr Ernest Borges Rd, Parel East, Parel, Mumbai, India

Dates: 20/08/2013 to 30/06/2016

Employment Type: Full time

Name of the supervisor: M H Thakur

Level of supervision: direct and Indirect supervision with transition over time

Description:

I was trained in theory and practical aspects of radiology with a curriculum prescribed by the University.

The first year of the training involved radiographic physics and anatomy, reporting of plain films, and fluoroscopy. Later in the year, I was exposed to cross-sectional imaging, and on-call rotation gradually.

The second year involved rotations in working with all the modalities of radiology including nuclear medicine and international radiology.

Employment history 2 - gaps in employment

Dates: 25/09/2018 to 09/12/2018

Duration: 2 months 14 days

Description:

After finishing Cambridge's fellowship in abdominal imaging, I got an immediate offer for a consultant radiologist job in Norway. I was collecting supporting documents for medical registration, applying for the visa and preparing to move out. I spent time with my parents in the meantime.

I was not employed in clinical or non-clinical positions.

Awards

- "Invest in the youth" programme by the European society of radiology (ESR) in March 2018. To be selected for the programme, my application along with a cover letter, and abstract submission was evaluated by the committee. As part of the programme, I presented my poster at the European congress of radiology (ECR). The conference registration fee and accommodation expenses were covered in the programme.
- In the same year, I became eligible for the European diploma in radiology (EDiR) examination with the examination fee covered by the congress.
- Travel scholarship awarded by Sam Jal Mistry Fund for the paper presentation of "Imaging features of different sub-types of osteogenic sarcomas" in European congress of radiology (ECR) 2016, Vienna.
- Winner in Radiology quiz arranged by women's cancer initiative conference held at Tata memorial hospital in 2015.
- Best public awareness poster, breast-feeding week, Aug 2011 and Runner up position for best public awareness poster, AIDS awareness program, 2010.

Research experience

- My training institute was a well-recognized centre for clinical research in India. Various levels of research were carried out including scientific articles publications, presentations at conferences, and authoring textbooks for clinical trials. As part of the training, I was introduced to research methodologies with a focus on ethics and governance. I attended regular good clinical practice courses at the basic level aimed at trainees.

- As part of my MD curriculum, I conducted a retrospective study titled “Analysis of anatomical variations of the celiac trunk and hepatic artery with CT angiographies” published in 2015. With the completion of the study, I am familiar with the research designs and approach, ethical committee application, academic writing and presentation skills.
- I am currently studying at the University of Edinburgh for a Master’s in health data science. The learning modules involve programming upskilling, healthcare delivery, management skills for conducting research or new projects and entrepreneur skills. The program also enables the students better to understand ethics, legal aspects, data security and information governance.

Publications

As primary author

1. SanthoshKumar GV, Mahajan A, Desai S, Thakur M. **Second Opinion by In-House Radiologists: Present Picture and Emphasis on Standardizing Imaging Protocol in Oncology.** Curr Probl Diagn Radiol. 2017;46(5):356-359. doi:10.1067/j.cpradiol.2017.04.004
2. Kumar GVS, Ramani S, Mahajan A, Jain N, Sequeira R, Thakur M. **Imaging of retained surgical items: A pictorial review including new innovations.** Indian J Radiol Imaging. 2017;27(3):354-361. doi:10.4103/ijri.IJRI_31_17

As co-author

1. Mahajan A, Santhoshkumar GV, Kawthalkar AS, et al. **Case of victims of modern imaging technology: Increased information noise concealing the diagnosis.** World J Radiol. 2017;9(12):454-458. doi:10.4329/wjr.v9.i12.454
2. Mahajan A, Santhosh Kumar GV, Vaidya T, Thakur M, Desai S. **Potential role of whole-body diffusion magnetic resonance imaging in tumor staging for pregnant patients with cancer.** Indian J Cancer. 2018;55(4):417-418. doi:10.4103/ijc.IJC_244_18
3. Mahajan, Abhishek & Kumar, GV & Vaidya, Tanvi & Gupta, Anurag & Agrawal, Archi & Saklani, Avnish & Engineer, Reena & Ostwal, Vikas & Arya, Supreeta. (2020). **Molecular functional imaging in an unusual**

case of penile metastasis. Cancer Research, Statistics, and Treatment. 3. 112. 10.4103/CRST.CRST_48_19.

Presentations

International

1. Essence of python programming language in medical image analysis: Enhancing workplace productivity. The annual conference of European Congress of Radiology, 2018
2. New ACR TI-RADS: Know Whether You Know, European congress of radiology, 2018
3. Sella and Juxtapella: Imaging anatomy and pathology: Pictorial exhibit. European congress of radiology (ECR) 2016
4. Imaging features of different sub-types of osteogenic sarcomas. European congress of radiology (ECR) 2016
5. Urgent and emergent radiological diagnoses. Annual conference of Radiological Society of North America (RSNA) 2016
6. Leptomeningeal metastasis; can MRI compare with CSF analysis. European congress of radiology (ECR) 2015

National

1. Non-resolving pneumonia other than cancer in tertiary cancer care centre: Imaging spectrum of various aetiologies and role of tissue diagnosis. Annual conference of Indian radiological and imaging association- 2015

Regional

1. Laryngeal tuberculosis mimicking laryngeal cancer. An educational case report presented at Edurad meeting, Mumbai, 2014

Departmental

- Regular teaching presentations and journal clubs. Few to names are imaging in bowel obstruction, renal arterial doppler scan, imaging in carcinoma larynx, carcinoma pancreas, imaging anatomy of neck spaces

Co-authored presentations

1. MRI abdomen sequences: Basics from physics to pathology. ECR 2019
2. CNS Tuberculosis– The Great Masquerader. European congress of radiology (ECR) 2017.

3. Drug Induced Pulmonary Toxicity: A diagnostic Conundrum! European congress of radiology (ECR) 2017
4. Axial skeleton tumors: Orphan of pediatric oncology? European congress of radiology (ECR) 2017.
5. Role of imaging in uncovering peritoneum. European congress of radiology (ECR) 2016
6. A glimpse to genetics of glioma: Welcome to the era of radiogenomics. Annual conference of Radiological Society of North America (RSNA) 2016.
7. Imaging in head and neck squamous cancers, A checklist manifesto. Annual conference of Radiological Society of North America (RSNA) 2016.
8. Multiparametric analysis of intra-axial brain lesions on MRI. N A Jain, Annual conference of Radiological Society of North America (RSNA) 2016.
9. Pediatric head and neck rhabdomyosarcoma: what the radiologist need to know' N A Jain, Annual conference of Radiological Society of North America (RSNA) 2016.
10. Infratemporal fossa and its relation to masticator space. Annual conference of Radiological Society of North America (RSNA) 2016.
11. Correlating advanced MR techniques with MIB index to grade and prognosticate gliomas: Can perfusion and diffusion MR solve the riddle? Annual conference of Radiological Society of North America (RSNA) 2016.

Continuing Professional Development (CPD)

- Active use of radiology learning hub for continuous learning and knowledge upskilling
- The CPD opportunities offered by the British medical association, medical protection society with a focus on non-clinical skills like communication, patient safety, personal development
- In-person CPD events by attending teaching sessions, REAL meetings and courses.
- Please find the attached CPD portfolio attached.

Conferences attended

- 2nd Radiology events and learning conference, 2021 Manchester.
- European congress of radiology in year 2015, 2018 and 2019
- Annual conference of the Indian Radiological & Imaging Association in year 2014 and 2016
- Several teaching conferences organized at regional and departmental level in my training years

Courses attended

- NIDA Clinical Trials Network online course, 2022
- Edward Jenner leadership course, a 2-week online course, 2022
- Mandatory courses prescribed by the present and previous employers including basic life support, radiation protection, fire safety, safeguarding
- Final FRCR preparation courses – 2018
- “Using proper manuscript language”, a course organized by tata memorial hospital with collaboration with Elsevier, 2017
- Good Clinical Practice - Basic & Advance Course, tata memorial hospital, 2017

Audit and quality improvement projects

In NHS

1. Actionable reporting – improving radiology reports

Aim: To produce actionable radiological reports according to RCR guidelines

Discription: Every radiology report should be precise, accurate and produce actionable recommendations based on the findings. This personal audit and later re-audit assessed the completeness of the reports if the report answered the clinical question, give definitive diagnosis or differential diagnoses for the pathology detected and recommendations to the referrer for further investigations or management processes. The audit showed a high adherence rate to the standard and the re-audit showed a continued high adherence rate. The personal learning point was making the radiology reports facilitate safe and prompt patient management.

2. Performance of e-aspects AI solution in local deployment stage in NCIC

Aim: To estimate the performance of the e-ASPECTS software compared to subsequent diffusion-weighted imaging

Discription: Rather than assuming all the output from an AI (Artificial Intelligence) model, we should evaluate its performance and practical implications like increased reporting time to review the results. We should also be aware of any potential consequences if a decision is made based solely on AI results in initial evaluation stages.

This audit showed less than optimal performance of an AI model in detection of early infarcts in brain CT scans. The learning points were to

carefully evaluate any future AI purchases and adhere to the “A buyer's guide to AI in health and care” published by NHSx.

Outside NHS

1. Implementation of standard MR imaging protocol, 2016

Aim: Improve the imaging efficiency of MRI rectum for staging cancer

Discerption: In collaboration with my professor, our efforts to replace the pre-existing MR scanning protocol resulted in less scanning time with a new MRI (Magnetic Resonance Imaging) scanning protocol having fewer and more relevant sequences.

The protocols for MR protocol followed the recommendations from the European Society of Gastrointestinal and Abdominal Radiology (ESGAR)

2. Checklist reporting, 2016

Aim: Implementing structured reporting in radiology

Discerption: I prepared a checklist for all the common radiological examinations so that to never miss an important finding which might lead to grave consequences.

The approach was well appreciated by my professors and colleagues. The effort resulted in improved patient safety, for example picking up a small subdural haemorrhage in CT scans.

Teaching and training experience

- Participated in regular teaching sessions carried out in my training institute. During my residency, I was responsible for training junior residents in academics and guide them in writing dissertations, posters and presentations.
- Presently involved in teaching program for radiology trainees with FRCR examination preparations.

Management experience

- In 2016, I was a part of the new specimen mammography machine procurement team. I contributed by collaborating with sale executives and presented comparative analysis of required technical specifications.

- Complete Edward Jenner management course by NHS leadership academy.
- Assisted and managed rota scheduling for radiologists in NCIC.

Procedures

Category	Name of the procedure	Level of competency
Fluoroscopy	Barium swallow, micturating urethrogram, retrograde urethrogram, loopogram	Independent
Non-vascular	Fine needle aspiration	Independent
	Percutaneous biopsy of superficial structures	Independent
	Thoracocentesis, paracentesis and insertion of drainage catheters	Independent
	Biopsy of deeper visceral organs	Entrustment to indirect or direct supervision depending on the complexity
	Advanced procedures – bone biopsy, radiofrequency ablation, percutaneous nephrostomy, percutaneous biliary drainage	Observation only. Knowledgeable in technique, indications, contraindications and possible complications
Vascular	Angiographies and related interventions Co2 angiography	Observation only. Knowledgeable in technique, indications, contraindications and possible complications
Treating post procedure complications	For example, treating minor pneumothorax after lung biopsy with insertion of drainage tube	Entrustment to direct supervision

Additional information

- Fluent in 4 languages - English, Norwegian, Kannada and Hindi
- Intermediate knowledge in programming and computer science. With collaboration with my colleague, Dr Adel, I have created a website aiding radiological diagnosis with Bayesian model of predictions. Link: <https://tumorprediction.onrender.com/>
- I contributed to creation of TNM staging android and iOS app which was launched by tata memorial hospital

- I am currently a member of the AI (Artificial Intelligence) group for the northeast and northwest England. We have a path to digital strategy for NHS.
- I have good programming skills, and insights of statistics, mathematics which are essential for machine learning. In my free time, I work with machine learning projects as a hobby.
- I have earned several certifications related to data science and machine learning. I am currently studying at the university of Edinburgh for data science in healthcare. I wish to become a resourceful data scientist, being a part of data backed advisory committee to my trust. With this skill, I will be able to analyse, interpret the medical data and arrive at insights and recommendations to safe and effective patient care. I am also knowledgeable in primary, data security, ethics and legal aspects of data acquisition, processing, storage, utilisation and sharing.