Kevish Kumar Napal

PhD in applied mathematics

Technology transfer and innovation in medical sciences.

I am a computationally-oriented researcher in the field of inverse problems.

I recently decided to direct my skills towards medical sciences, more generally to biology.

I would be glad to team up with medical researchers to innovate for better healthcare.

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PROGRAMMING

Languages	Matlab, Python, Julia, Mathematica, C++
Numerical analysis	Deep Learning (TensorFlow) Finite Elements (FreeFem++)
Open Source Software	Julia library EffectiveTMatrix.jl version 1.0.0 (K. Napal, 2024)

LANGUAGES

French	Native	(C2)
English	Fluent	(C1)

SKILLS

- Inverse Problems & Regularizations
- Mathematics for biology MSc MBIO major
- Deep Learning certificates
- Wave propagation
- Spectral Analysis

GRANTS

- Fondation Mathématique Jacques Hadamard
- U.S. National Science Foundation
- UK Metamaterials Network (funds from DSTL)
- UK Research and Innovation

PORTABLE SKILLS

HOBBIES

Sports	Swimming, Yoga, Rollers, Chess
Cultural	Flamenco Guitar, Science Fiction
Sciences	Natural, Human & Social

SELECTED LINKS

Web Site | GitHub | Linkedin | Article

Que tes principes ne t'empêchent jamais de faire ce qui est juste.

– Isaac Asimov

EDUCATION

NOV 2016 – DEC 2019

PhD in Applied Mathematics

CMAP · École Polytechnique · Palaiseau, France

- Team DEFI supervised by H. Haddar (INRIA), L. Audibert (EDF), L. Chesnel (INRIA)
- Imaging crack networks from acoustic pressure fields: thesis
- Tools: PDEs, Inverse Problems, Finite Elements Method

SEP 2014 – OCT 2016

Mathematics of Modelling Master - MBIO major
Applied mathematics to biology and medical sciences

Sorbonne Université · Paris, France

- Study of models arising from other fields (physics, biology, economy)
- Mathematical analysis and numerical simulations
- Specialisation to biology: i) tumor growth | ii) neurosciences

EXPERIENCE

NOV 2021 – OCT 2023

Research associate in Dynamics

University of Sheffield · Sheffield, UK

- Wave propagation in random media
- Software: model for random metamaterials: EffectiveTMatrix.jl | MultipleScattering.jl
- Conference organisation: BAMC 2023
- Co-supervision of two PhD students

JAN 2023 – JUN 2023

Invited to the research program "Multiple Waves Scattering"

INI · University of Cambridge · Cambridge, UK

- Communication of my results: Talk
- Participation to the research committee discussions
- Initiation of a new project in a stimulating environment: article

JUL 2022 – AUG 2022

Supervision of a research intern, funded by DSTL

University of Sheffield · Sheffield, UK

- Lead the project, obtaining funding and recruiting the trainee
- Exchange with DSTL about their technical constrains
- Title: Frequency filtering with multiple scattering in resonators cluster: report

JAN 2020 – JUL 2021

Research associate in the Engineering Department of CU Boulder

University Boulder · Boulder, Colorado, USA

- Propagation of waves in poro-elastic media with cracks
- Software development: numerical resolution by the finite element method
- Localisation of cracks from measured seismic waves

MAI 2016 – OCT 2016

Introductory Research Dissertation at INRIA

Ecole Polytechnique · Palaiseau, France

- Non destructive testing for crack monitoring in concrete
- Data simulation with FreeFem++ (C++)
- Post processing of the simulated data (crack imaging) with Matlab

JAN 2019 (2 weeks)

Startup Dataswati

Institut de Mathematique d'Orsay · Orsay, France

- Measuring Similarities and Improving Quality Prediction of Factory Outputs.
- Tools: Transfer Learning and Domain Adaptation techniques

NOV 2016 – DEC 2019

Teachings of mathematics

Sorbonne Universite · Paris, France

Numerical Methods in Python for Differential Equations | Cryptography | Symbolic Calculus with Wolfram Alpha