

Atanu Pathak – Curriculum Vitae

Address	P.O. BOX 500 Batavia, IL 60510, U.S.A.	Email	pathakatanu01@gmail.com
Mobile Phone	+1 (502) 202 9197	Web	http://atanupathak.com
Status in U.S.A.	F1 visa (STEM OPT)	Repository	https://github.com/atpathak
		LinkedIn	https://www.linkedin.com/in/atanu-pathak/

Career Objective

Self-motivated researcher with strong analytical and excellent interpersonal skills seeks position to demonstrate ability to think outside the box in the fields of Software Engineering, Data Science & Machine Learning.

Education

Jan 2017- Ph.D. (Experimental particle physics), University of Louisville, Kentucky, USA
Aug 2020 *Thesis: Search for new physics using lepton flavor violating signatures in modern particle colliders. Cumulative Grade Point Average: 4.0/4.0*

Aug 2013- M.Sc. (Physics), Rajabazar Science College, University of Calcutta
Jun 2015 *Score: 77.4%, 1st class, Grade: A+*

Aug 2010- B.Sc. (Physics), Seth Anandram Jaipuria College, University of Calcutta
Jul 2013 *Score: 74.3%, 1st class with Honors*

Certifications

- AWS: *Cloud Practitioner* (May 2020), *Solutions Architect Associate* (June 2020); edX: *AWS Developer* (Jun 2020).

Employment

Dec 2020- Postdoc Research Associate at Purdue University Northwest, Hammond, IN
Present *Responsibilities involve new physics discovery in experimental High Energy Physics at CMS experiment.*

Sep 2020- Data Science Teaching Assistant at CloudBaud LLC.
Nov 2020 *This job involved mathematical and statistical applications for data management.*

Skills

- Strong in Unix shell scripting, Fortran, C, C++, C#, Python, R, SQL, Scala, Java, Javascript, CSS, Latex, XML.
- Expertise in Data Mining and Machine learning (Scikit-learn, TensorFlow, Keras), Statistical inference.
- Experience in Deep Learning, pattern recognition, predictive modeling, NLP and operations research.
- Strong fundamentals in problem solving, Monte Carlo techniques, algorithm design and business impact.

Research Experience

- Data visualization on COVID-19 and make prediction for next 5 days Global Confirmed/death Cases using ML.
- Predict attrition rates of employees in IBM data set with XGBoost ML algorithm using Amazon SageMaker.
- Monitoring the dead regions for the CMS Phase-1 Pixel Detector using depth-first search technique.
- Layout design and performance studies for a new Inner Detector for upgrade of the ATLAS experiment
- Machine learning in searches for new and exotic decays of the Higgs boson at the ATLAS experiment.
- Development and testing software for Belle II experiment to enhance the discovery of new physics.

Publications List

Co-author of 279 publications from ATLAS and Belle II experiments. Full list available at: <https://inspirehep.net/search?ln=en&ln=en&p=find+ea+pathak%2C+atanu>. Few selected ones are listed below:

- **Searches for lepton-flavour-violating decays of the Higgs boson in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector.**
Published in Physics Letters B800 (2020), 135069, E-print: arXiv: 1907.06131.

Awards

Mentored Undergraduate Research & Creative Activities Grant Award, University of Louisville (2018, 2019).