NATION INNOVATION

Live Training & Internship Programs

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DataForge: Python, Data Analytics & Machine Learning Internship

A 4-week, short-term industry internship to build production-grade Data Analytics and Machine Learning skills — Python, Pandas, EDA, visualization and Scikit-learn — through real-world projects you can ship to your GitHub portfolio.

START DATE	DURATION	MODE	FEE
15 June 2026	**6 Weeks**	**Online / Hybrid**	**Rs. 1999/-** ~~{MRP Rs.3999/-}~~

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In collaboration with NSDC & DPIIT | MSME Registered | Recognised under Startup India & Skill India

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Meet Your Instructor

Mr. Saurabh Singh

Data Science Trainer · Expertise in Python, Data Analytics and Machine Learning

Experience in working with real-world datasets, building ML models in production, and mentoring students into Data Analyst and ML Engineer roles.

About the Program

The DataForge Internship is a focused, short-term industry program built for students, fresh graduates and early-career professionals who want to break into Data Analytics and Machine Learning. Over four hands-on weeks, you will move from “I know some Python” to “I can analyse a real dataset, build a working ML model and present my findings” — the core skill set hiring managers screen for in Data Analyst, Data Scientist and ML Engineer interviews.

The program goes deep on the things that actually matter on the job: Python programming for data, working with Pandas and NumPy, cleaning messy real-world data, exploratory data analysis, communicative visualizations, and supervised machine learning with Scikit-learn — regression, classification, model building and model evaluation. You will work on a mini analytics project, an insight-generation report and a capstone end-to-end ML project chosen from House Price Prediction, Spam Detection or Student Performance Prediction.

By the time you finish, you will have a polished GitHub portfolio with a Data Analysis project and a Machine Learning project, an internship certificate, and the confidence to walk into Data Analyst and Machine Learning interviews and explain — clearly — what you built, how you built it and what the results mean.

Learning Outcomes

By the end of this program, learners will be able to:

- Write clean, idiomatic Python code for data manipulation and analysis
- Use Pandas and NumPy to load, clean and transform real-world datasets at speed
- Perform Exploratory Data Analysis (EDA) to surface patterns, outliers and relationships
- Build clear, communicative visualizations with Matplotlib and Seaborn
- Apply core supervised ML techniques — Regression and Classification
- Build, train and evaluate machine learning models using Scikit-learn
- Take a Machine Learning project end-to-end, from raw data to working predictions
- Walk into Data Analyst and ML Engineer interviews with a strong, recruiter-ready GitHub portfolio

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Course Curriculum

The curriculum is delivered module-by-module with live sessions, hands-on labs, assignments and instructor-led doubt clearing. Each module builds on the previous one and ends in an applied exercise.

Module 1: Python Programming Fundamentals (Week 1)

- Python essentials: variables, data types, control flow, functions
- Working with lists, dictionaries, sets and comprehensions
- File handling, modules and virtual environments
- Writing clean, readable, debuggable Python
- Setting up your data science workspace (Jupyter / VS Code)

Module 2: Data Handling with Pandas & NumPy (Week 1)

- NumPy arrays, vectorized operations and broadcasting
- Pandas Series and DataFrames — the workhorses of data analysis
- Loading CSV, Excel and JSON datasets
- Selecting, filtering, sorting and aggregating data
- Group-by, pivot tables and merging datasets

Module 3: Data Cleaning & Preparation (Week 1)

- Handling missing values the right way
- Detecting and treating outliers
- Type conversions, encoding and scaling
- Working with dates, strings and categorical data
- Hands-on: Mini Project — Data Analysis Task on a real dataset

Module 4: Exploratory Data Analysis (EDA) (Week 2)

- The EDA mindset: question the data before modelling
- Univariate, bivariate and multivariate analysis
- Correlation, distributions and statistical summaries
- Spotting data quality issues and biases
- Translating EDA findings into clear business insights

Module 5: Data Visualization Techniques (Week 2)

- Matplotlib essentials and customisation
- Seaborn for fast, beautiful statistical plots
- Choosing the right chart for the question (bar, line, scatter, heatmap, box)
- Designing visuals that tell a story, not just display data
- Interactive visualisations and dashboard basics

Module 6: Real-World Dataset Analysis (Week 2)

- Sourcing and loading real public datasets
- Building a structured analysis workflow
- Drawing actionable insights from messy data
- Presenting results to a non-technical audience
- Hands-on Project: Insight Generation Report

Module 7: Supervised Learning Foundations (Week 3)

- What ML is — and what it isn't
- Regression vs Classification — when to use which
- Train / validation / test splits and why they matter
- Bias-variance trade-off in plain language
- Linear & logistic regression, decision trees, k-NN

Module 8: Model Building with Scikit-learn (Week 3)

- The Scikit-learn API: fit, predict, score
- Feature engineering and feature selection
- Pipelines and reproducible workflows
- Hyperparameter tuning basics

- Avoiding data leakage

Module 9: Model Evaluation & Optimization (Week 3)

- Regression metrics: MAE, MSE, RMSE, R^2
- Classification metrics: accuracy, precision, recall, F1, ROC-AUC
- Cross-validation and robust performance estimation
- Confusion matrices and error analysis
- Hands-on: Mini ML Project (Regression or Classification)

Module 10: End-to-End ML Project Build (Week 4)

- Choose your capstone: House Price Prediction, Spam Detection or Student Performance Predictor
- Project scoping, dataset selection and data understanding
- Building the full pipeline — clean → explore → model → evaluate
- Iterating with feedback from your mentor
- Documenting your decisions and trade-offs

Module 11: Deployment, Demo Day & Portfolio (Week 4)

- Packaging your project for sharing and submission
- Pushing your work to GitHub with a strong README and clean notebooks
- Recording a clean walkthrough demo of your project
- Final project presentation to instructors and peers
- Adding the project to your resume, LinkedIn and portfolio site

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Hands-on Projects

Every concept is reinforced through a project. You will graduate with a portfolio of working, demonstrable projects — not just notes.

#	Project	What You'll Build
#1	**Data Cleaning & Analysis Task**	*Take a messy real-world dataset, clean it with Pandas/NumPy, run summary analytics and answer a set of business questions in a clean Jupyter notebook. Demonstrates Python, Pandas and data wrangling fundamentals.*
#2	**Insight Generation Report (EDA)**	*Run a structured Exploratory Data Analysis on a real public dataset, produce visualisations and ship a report of data-driven insights. Demonstrates EDA, visualization and analytical storytelling.*
#3	**Visualization Dashboard**	*Build a multi-chart dashboard using Matplotlib and Seaborn to communicate trends, comparisons and distributions to a non-technical audience. Demonstrates visualization design and chart selection.*

#	Project	What You'll Build
#4	**Mini ML Model (Regression / Classification)**	*Build your first end-to-end Scikit-learn model on a clean dataset — train, tune, evaluate and interpret. Demonstrates the ML workflow and Scikit-learn API.*
#5	**House Price Prediction**	*Build a regression model that predicts house prices from real estate features, with feature engineering and proper evaluation. Demonstrates regression, feature engineering and model evaluation.*
#6	**Capstone — Spam Detection / Student Performance Predictor**	*Capstone project: an end-to-end ML pipeline on a chosen problem, deployed and demoed on Demo Day. Demonstrates the full ML lifecycle from raw data to working prediction.*

Get Certified

Yes! You will be certified for this internship on completion of the program.

✓ Official & Verified	✓ Easy to Share	✓ Career Edge
Signed by the instructor — recognised internship certificate	Add directly to your resume and LinkedIn profile	Use it to stand out and get ahead in your Data / ML career shift

RESERVE YOUR SEAT

Live Training Highlights

Everything you get when you enrol in a Nation Innovation live training program — from certification to career support.

Certificate Certificate course in collaboration with NSDC, DPIIT	**Internship** Opportunity to intern overseas	**24×7 Support** Training with 24×7 mentor support
Mentoring & Doubt Sessions Personalized 1:1 mentoring	**Flexible Schedule** Flexible course schedule to fit students and working professionals	**6-Digit Salary Potential** Assured 6-digit salary association with industry partners
LMS & Recording Access Free access to Learning Resource Portal and session recordings	**Live Projects** Engage in 3+ live projects and live case studies	**100% Placement Support** Career assistance by industry experts
Industry Tools Access		

Hands-on access to industry-leading data and ML tools (Python, Pandas, Scikit-learn, Jupyter)		

Bonus Learning Perks

Career-ready add-ons included with your enrolment, at no extra cost.

★ GitHub Profile	★ LinkedIn Profile	★ Resume Writing	★ Soft Skills	★ Mock Interview
Build a recruiter-ready GitHub portfolio with real data and ML project commits.	Optimise your LinkedIn for visibility, keywords and recruiter reach.	Craft an ATS-friendly, role-targeted resume that gets shortlisted.	Build communication, teamwork and workplace etiquette for interviews.	Live mock interviews with feedback to sharpen your performance.

Bonus Features (Program Specific)

★ Final Project Presentation	★ Hackathon / Demo Day	★ Top Performer Recognition
Present your capstone Data/ML project to instructors, peers and industry guests.	Compete in a closing-week Demo Day with prizes for the most innovative builds.	Top performers get featured on Nation Innovation channels and recommended to hiring partners.

Learning Roadmap

Your journey from learner to placed AI professional — broken down into three guided steps.

STEP 1 Building a Strong Foundation	STEP 2 Internship & Project Learning	STEP 3 Placement Support
Build strong Python, Pandas, EDA and Scikit-learn fundamentals from scratch with industry experts.	Gain hands-on experience working on 3+ live data and ML projects, including a portfolio-ready capstone.	Counselling, confidence building and resume support to land the right Data Analyst / ML Engineer opportunity.

Recognised & Trusted

Nation Innovation operates in collaboration with leading Government of India initiatives and industry bodies — so your learning, certificate and career support carry credibility.

MSME Registered	Startup India	Skill India	DPIIT Approved	NSDC Partner
Yes	Yes	Yes	Yes	Yes

Note: replace the placeholder badges above with the official MSME / Startup India / Skill India / DPIIT / NSDC artwork files when finalising the document.

What Our Learners Say

Trusted Reviews: 24+ | **Average rating: 5 / 5 ★**

★★★★★ *"Nice and well-organized course."* **Ashwini Ranade** Course: Data Science **Placed at: National Institute of Hydrology (NIH)**	★★★★★ *"I recently completed my Python Programming Internship at Nation Innovation, and it was a highly enriching experience that strengthened my Python skills, coding confidence, and industry readiness through practical learning and supportive mentorship."* **Manisha Kumari** Course: Python Programming Internship **Placed at: CISCO**
★★★★★ *"Overall good."* **Deepak Chaudhary** Course: Internet of Things **Placed at: BlockDeep Labs**	★★★★★ *"Thanks for understanding each topic very easily. I got to learn many new things from this training. Your teaching style and dedication always inspires me."* **Sikandar Kumar** Course: Python Programming **Placed at: —**
★★★★★ *"After this training, I can easily know where to do what I need to get done, from schematic capture to footprints to out-jobs."* **Rishabh Keshavanand Joshi** Course: PCB Design **Placed at: —**	★★★★★ *"A good platform for creative and curious minds interested in the field of electronics. Platform offers an extremely well-curated list of courses and modules — couldn't be more satisfied!"* **Kartik Yadav** Course: Electronic Devices and Circuits **Placed at: —**

View all testimonials →

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Nation Innovation is a leading platform in the electronics and software domain, offering a comprehensive source of knowledge encompassing software and hardware.