

# Urmee Pal

Dresden, Germany

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## EXPERIENCE

### JOYNEXT GmbH

October 2022 – September 2025

Dresden, Germany

Working Student- IVI Connectivity

- Automated Confluence–Jira workflows to streamline project planning, holiday tracking, real-time employee status and issue validation.
- Built data processing pipelines and visualization to cluster customer requirement documents and bug tickets automatically.
- Automated generation and validation of Polarion Design Documents by analyzing source code using Abstract Syntax Tree techniques.
- Developed intelligent tools, including hybrid file grouping system, LLM-based audio transcription with context-aware speech recognition.
- Developed Alexa test workflows, Tested and integrated speech recognition features on Android systems.
- Researched and tested hardware solutions for Android, including UWB chip communication.
- Managed GitLab-based version control and CI/CD for multi-component server-client projects.

**Tech Stack:** Python, HTML, CSS, Bash scripting, Node.js, AWS, Alexa, Android Automotive OS, GitLab, Confluence, Jira, Polarion, Clang, Plotly, SOAP, JSON, CSV, XLSM, RTF, Git, NXP Tool Suite

**Libraries & Packages:** Numpy, Pandas, scikit-learn, Whisper, Vosk, Ollama, Plotly, Atlassian-api, BeautifulSoup4, Openpyxl, Holidays, Logging, Re, clang

### IoT-Plan GmbH

August 2020 – June 2021

Dresden, Germany

IoT Application Specialist

- Maintained IoT infrastructures by developing web applications, integrating sensor-based systems, deploying gateways
- Developed and implemented firmware for XDK, IVAS, and DRAGINO sensors; analyzed sensor data and decoded Base64 payloads

**Tech Stack:** Python, C++, Javascript, XDK Workbench, Azure, MQTT, Power BI

### Nordecode BD Ltd.

February 2018 – August 2018

Dhaka, Bangladesh

Software Development Engineer

- Developed and maintained a housing society management system

**Tech Stack:** Node.js, React

## EDUCATION

### Technische Universität Dresden

October 2019 – September 2025

Dresden, Germany

Master of Science in Computational Logic

### Shahjalal University of Science and Technology

January 2013 – October 2017

Sylhet, Bangladesh

Bachelor of Science in Computer Science

## THESIS & RESEARCH PROJECTS

### Construction of Human-solvable Akari Puzzles

(Master's Thesis)

**Tech Stack:** Answer Set Programming (ASP), Python, C++, Clingo, PIL, Matplotlib, faulthandler, re, random, time

### Quantifying Cytoskeletal Deformations in the Retinal Pigment Epithelium (RPE) using Topological Data Analysis

(Research Project)

Center for Systems Biology, Dresden, Germany

**Tech Stack:** Python, Fiji (ImageJ), Tissue Analyzer (Fiji plug-in), NumPy, scikit-image, pyapr, Ripser, SciPy, Matplotlib, Persim, Pathlib

### A Machine Learning approach for Stylometric Analysis of Bangla literature

(Bachelor's Thesis)

**Tech Stack:** Java, Python, ML, NLP, SVM, Naive Bayes, Clustering, PCA

### A Machine Learning approach on Latent Semantic Analysis for Ambiguity Checking on Bengali literature

(Project)

**Tech Stack:** Java, Python, LSA, VSM, TF, TF-IDF, Stop Word Removal, Bengali Stemmer, SVM

## PUBLICATION

**A Machine Learning approach for Stylometric Analysis of Bangla literature, 2017 20th International Conference of Computer and Information Technology (ICCIT), Dhaka, Bangladesh, 2017, pp. 1-5, doi: [10.1109/ICCITECHN.2017.8281800](https://doi.org/10.1109/ICCITECHN.2017.8281800)**

**A Machine Learning approach on Latent Semantic Analysis for Ambiguity Checking on Bengali literature, 2017 20th International Conference of Computer and Information Technology (ICCIT), Dhaka, Bangladesh, 2017, pp. 1-4, doi: [10.1109/ICCITECHN.2017.8281797](https://doi.org/10.1109/ICCITECHN.2017.8281797)**

## HONOURS & AWARDS

- Graduate Record Examinations (GRE) - 308/340. Quant: 159/170, Verbal: 149/170, Analytical: 3/6 – ETS
- Govt. Scholarship (12th, 10th, and 5th Grade) – Higher Secondary, Secondary and Primary Education Board Bangladesh (distinctly)

## LANGUAGES

ENGLISH – C1

DEUTSCH – A2

## SKILLS

Programming	Python C++, Javascript, Java	Expert Moderate	ASP Node.js, React, HTML, CSS	Advanced Moderate	LaTeXX Bash	Advanced Basic
	REST/SOAP APIs, Whisper, VOSK, LLM, Android (Java), AWS, Alexa, Azure, Jira, Confluence, Azure, GitLab, MQTT Embedded: sensor platforms, NXP UWB tools			Databases: MySQL, MongoDB		
Core Technicalities	Environments: Linux, PyCharm, VS Code, NetBeans, XDK Workbench, Android Studio, Eclipse, Codeblocks, Jupyter ML / NLP: SVM, Naive Bayes, LSA, Clustering, PCA, Stylometry, TF, TF-IDF, VSM, Bengali Stemmer, POS tagging Image Analysis & Data Visualization: TDA, Persistent Homology, Skeletonization, Segmentation, APR, Point Cloud Processing, Fiji (ImageJ), Tissue Analyzer, Pyapr, Ripser, Plotly, Matplotlib, Persim, Power BI					