



LUND  
UNIVERSITY



## Module 2: Introduction to low-code Python programming

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Lesson 2.2: Python and AI-aided data  
analysis

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# Python for Social Science Data Analysis

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- Descriptive inferential exploratory overview
- Highlight quantitative social methods
- Introduce text image analysis
- Python enables flexible scaling
- Use pandas matplotlib scikit



# AI-Aided Quantitative Analysis with Python

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- LLMs generate statistical code
- Query data with prompts
- Automate tests and models
- Lower barriers for newcomers
- Balance manual control AI



# AI-Aided Computational Content Analysis

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- LLMs classify summarize topics
- Image models study visuals
- Merge text visual features
- Automate entity theme detection
- Scale massive corpus analysis



# Low-Code Data Analysis with Tables

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- View data with pandas
- Filter group summarize quickly
- Compare high-code low-code
- AI generates interprets tables
- Use pandasgui datatable  
ChatGPT



# Data Transformations with AI Assistance

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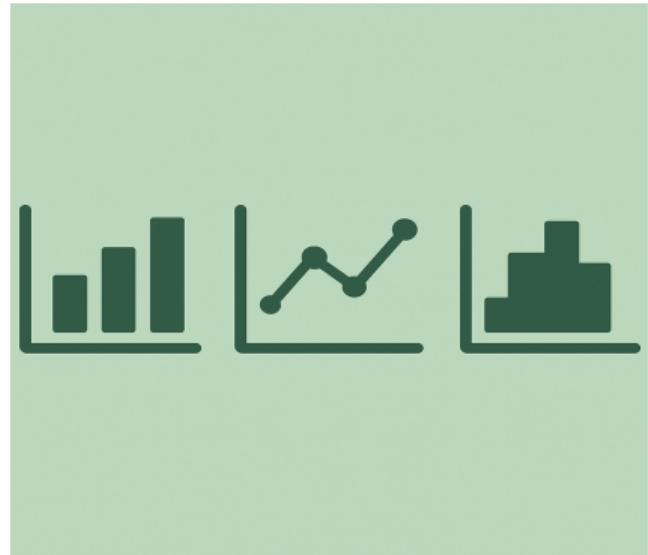
- Select variables via prompts
- Filter cases by conditions
- Aggregate summaries by groups
- Contrast pandas and AI queries
- Learn with interactive AI



# Low-Code Data Analysis with Graphs

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- Create basic bar line hist
- Contrast univariate bivariate plots
- AI suggests suitable charts
- Use matplotlib seaborn plotnine
- Reveal trends with little setup



# Multivariate and Interactive Graphs

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- Show multivariable relationships
- Use scatter heatmap bubble
- Add interactivity with plotly altair
- AI refines layouts variables
- Explore patterns dynamically

