UT's Approach

to Micro-credentials

Open-Source — Research-Based — Industry-Ready

University of Twente
GREEN FINANCE Erasmus+ Kick-off Training

Our Philosophy: Three Pillars

Open-Source

- All materials on GitHub
- Reproducible code
- CC-BY licensing
- Version controlled
- Community contributions

Research-Based

- Current research methods
- Peer-reviewed content
- Academic rigor
- Continuous updates
- QuantLet standards

Industry-Ready

- Real-world datasets
- Industry tools (Python, R)
- Practical exercises
- Portfolio-building
- Employer-valued skills

These three pillars guide all our micro-credential development

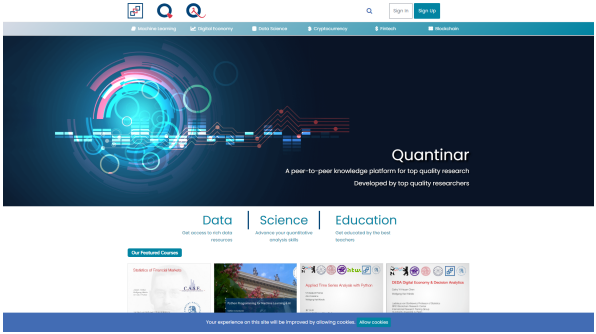
Platform: Quantinar.com

Interactive Learning Platform

- Video lectures with code
- Jupyter notebooks
- Auto-graded exercises
- Progress tracking
- Certificate generation

Key Features

- Browser-based coding
- No installation needed
- Real-time feedback
- Peer discussion forums



URL: quantinar.com — Free and open access for all learners

Repository: QuantLet.com

Reproducible Research Standard

- Standardized code format
- Metadata requirements
- Automatic documentation
- Cross-language support
- Quality assurance

Why It Matters

- Students learn best practices
- Code is verifiable
- Research becomes teaching
- Industry-standard workflow

URL: quantlet.com — 1000+ verified code examples from research papers

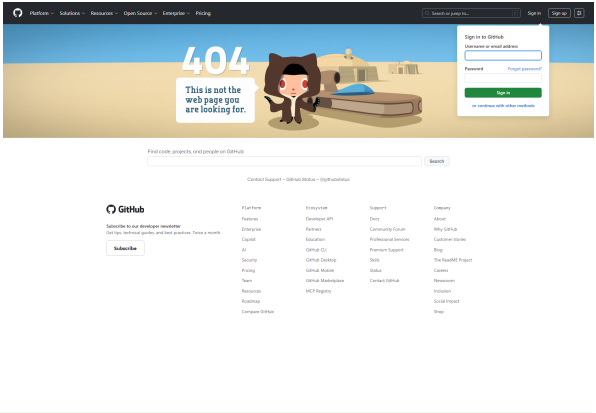
Example: Neural Networks Course

GitHub Repository

- Complete course materials
- Lecture slides (Beamer)
- Python notebooks
- Datasets included
- MIT License

MC Integration

- 4 ECTS equivalent
- Self-paced learning
- Auto-graded assignments
- Digital badge on completion



URL: github.com/Digital-AI-Finance/neural-networks

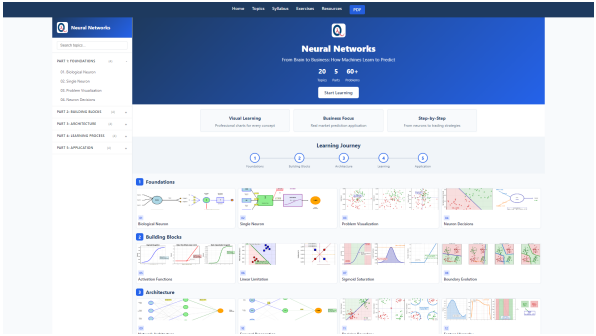
Delivery: GitHub Pages

Static Site Generation

- Free hosting via GitHub
- Automatic deployment
- Custom domain support
- Mobile-responsive
- No server costs

Student Experience

- Clean navigation
- Embedded notebooks
- Direct code access
- Works on any device



URL: digital-ai-finance.github.io/neural-networks

Lessons Learned

What Works Well

- ✓ GitHub enables collaboration
- ✓ Open materials attract students
- ✓ Research feeds directly to teaching
- ✓ Industry recognizes the skills
- ✓ Low cost, high scalability

Key Success Factors

- Faculty buy-in essential
- Start small, iterate fast
- Engage industry early

Challenges We Faced

- Initial setup time investment
- Learning curve for Git/GitHub
- Quality assurance at scale
- Recognition pathway development

Recommendations

- Use existing templates
- Build on proven platforms
- Document everything
- Create student support systems

Three years of experience developing open-source micro-credentials

Discussion: Your Context

Questions for Your Team

1. **What fits your context?**
   - Open-source approach?
   - GitHub-based materials?
   - Interactive platforms?
   - Research integration?
2. **What concerns do you have?**
   - Technical capacity?
   - Faculty readiness?
   - Student access?
   - Recognition?

UT Can Support With

- Template repositories
- GitHub training for faculty
- Quantinar platform access
- Joint course development
- Quality assurance frameworks

Next Steps

- Share 1 thing that fits
- Share 1 concern
- Identify quick wins

10 minutes for country team discussion — share one fit and one concern