Connecting Pure to the web

Eindhoven’s Pure(ly) data driven research website

Nick Veenstra, research information specialist

Information Management Services
Pure at Eindhoven University (TU/e)

- Implemented as Current Research Information System (CRIS) in November 2015
- TU/e institutional repository
- 135,000 publications
- Decentralized input of research by scientists + secretary staff
- All major datatypes in use except applications
- Bilingual (Dutch/English)
The website project: starting point

- TU/e site consisted of thousands of pages: a database in itself
- 380 editors working in the CMS (25% of total support staff)
- 97% of content not used
- Search (Solr) not optimized
- Research organization structure: website = source system
- No clearly defined research section: Research pages = Employee directory + publications bolted on
- Numerous personal sites and webservers
The website project: principles

• Agile approach (new to TU/e): working in 2 week sprints, monthly review sessions
• Create 3 new sites:
  • Research: data driven, profiling researchers and their work
  • (About) the university: basic information, facts & figures
  • Community: scheduled events (research symposium, student and staff activities) and information about staff (from a non research perspective)
• Find what you’re looking for within 3 clicks
• Structured search results: researcher page first result, not on page 4
• Enterprise service bus for data transport, using the “new” Pure API

First phase: Community and research
  • 2 Product owners
  • 1 Project leader (CV included a Pure implementation)
Team structure

Steering committee

Project manager

Product owner community

Product owner research

Project team

Scrum team

TU/e

maxserv

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Enterprise Service Bus

IDEAL
Website ➔ TYPO3 ➔ ESB ➔ Finance ➔ Pure ➔ HR ➔ Student adm.

IN PRACTICE
Website ➔ TYPO3 ➔ ESB ➔ Finance ➔ Pure ➔ HR ➔ Student adm.
The website project: starting up

Research website project “war room session” autumn 2017

• Talks with researchers
• Brainstorming about content, layout
The war room: researcher feedback

- Clean site
- Simple menu structure
- Focus on group, not university
- No prominent university menu structure
Project timeline

Kickoff November 8th

Webserver moved to external host

Live with minimal viable product + Portal April 1st

Live September 24th

MVP:

- Research start page
- Researcher page (incl publications)
- Organization page

Critical mass / Live with 10 groups and 100 (top segment) researchers
Site content gathering

Photo sessions for consistent staff photos (no more holiday snaps)

Bio writing team

Top down: professors, associate professors, assistant professors, PhD, Postdoc, etc.

Approach research groups via intake meetings:
  • Preferences for research content and display
  • Establishing contact persons
Pure as data source

Bettina Speckmann heads the Applied Geometric Algorithms group at the Department of Mathematics and Computer Science of TU Eindhoven. Geometric algorithms is the field within algorithms research that is concerned with the design and analysis of efficient algorithms and data structures for problems involving geometric objects in 2-, 3-, and higher-dimensional space. The Applied Geometric Algorithms group mainly focuses on geometric algorithms for spatial data and applications of geometric algorithms in the areas of C/Science and Smart Mobility (including automated cartography and moving object analysis), geo-visualization, visual analytics, and e-Humanities. We frequently combine the rigorous methods from algorithmic research areas such as computational geometry — which give performance guarantees with respect to both the quality of solutions and the running time of algorithms — with efficient engineering to achieve results of both theoretical and practical significance.

Bettina Speckmann

Profile information

“Humans have an intuitive sense of spatial structures, computers just "see" zeros and ones. I find it endlessly fascinating to teach computers how to gain a human-like understanding of spatial data.”

Research profile

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Academic background

Bettina received her PhD from the University of British Columbia (Canada) in 2001. Afterwards she spent two years as a postdoc at the Institute for Theoretical Computer Science of ETH Zurich (Switzerland) before joining TU Eindhoven as an assistant professor in 2003. She became associate professor in 2008 and was promoted to full professor in 2012. Since 2015 she is leading the Applied Geometric Algorithms group.

Bettina was a member of both the Young Academy of the Royal Netherlands Academy of Arts and Sciences (2010-2015) and of the Global Young Academy (2011-2016). In 2011 she won the first Netherlands Prize for ICT Research. She served as PC co-chair for the 19th International
Aligning Web and Pure datamodels

Connecting Pure to the web
Decisions & temporary solutions

- Highlighted content missing consistency: only at researcher level, at groups “5 most recent”
- Highlighted content retrieved from old api, not in new
- Some datatypes do not have rich text fields; i.e. no bullets, spacing on project descriptions: content sourced in TYPO3 (not good!)
- Pure as source system for researcher photo, no other images provided to the website
- Support staff visibility set to backend, sync once
- Pure Impacts (mis)used for:
  - Strategic areas (university level)
  - Research areas (university level)
  - Research topics / lines (group level)
Data management

Data delivered from Pure to TYPO3 via Enterprise Service Bus

10 content managers on the CMS side append optional data (“content elements”) not maintained in Pure or impossible to retrieve:

- News items
- Images (funder logo!)
- Events, calendar
- Structured texts (projects)

Content elements in TYPO3 that are linked to Pure are refreshed periodically (researcher, bio, quote, profile picture, publications, highlighted items, etc.)
Web pages: data driven, but not real time

- API performance not suited for realtime page generation
- TYPO3 is not based on realtime page generation from data source
- Pure data is transferred to both the cloud portal and the TYPO3 environment
- TYPO3 stores info as basic pages, further editing / appending info possible, sometimes needed (text markup vs rich text Pure)

👍🏻 TYPO3, Portal and Pure run semi independent: downtime of separate systems not an issue
Data quality steps and effects

- Increased researcher activity in Pure because of portal
- Incentives to correct data (author collaboration graph)
- Intake sessions established direct contact with research groups
- Web and Portal showcase the research information chain: active talks with HR, Finance and student administration to improve information flow
- Working on completing entire research life cycle data chain:
  - Getting funder info (EU/NWO) for project details
  - Jira issues to improve datamodel and api on integration aspects
Website and portal integration

Sorry, but we couldn't find any results for Homer Simpson.

Please allow us to point you to the TU/e research portal, where you can find details of our researchers, groups, research output (repository) and scientific activities.

Search for 'Homer Simpson' in our research portal.

**MEET SOME OF OUR RESEARCHERS**

- **Assistant Professor Hans Wijn**
  - Microsystems

- **Full Professor Joost van der Vliet**
  - Microsystems

- **Assistant Professor Yael van de Burgt**
  - Microsystems

- **Associate Professor Renate Lutten**
  - Microsystems

**KEY PUBLICATIONS**

- Encapsulation of guest molecules into a dendrimer box (Science, 1994)
- Removable polymers from self-complementary monomers, using quadruple hydrogen bonding (Science, 1996)
- Probing the solvent-assisted nucleation pathway in chemical self-assembly (Nature, 2006)
- Functional supramolecular polymers (Science, 2012)
- Protein complexity in supramolecular polymerization (Nature, 2010)
Live tour of the website

- Research
  - Group
    - Lab
    - Project
  - Researcher
  - Awards
- Portal
Backup slides
EXPLORE OUR RESEARCH

Keyword

Search

JOB OPPORTUNITIES

NEWS

Connecting Pure to the web
RESEARCHERS

Talent from all over the world comes to work at TU/e because they will be supported by outstanding research infrastructure and Open Science practice, excellent researchers and innovative partnerships to enable publications in high impact magazines and realize break-through innovations. Researchers are thought leaders in their fields and actively steer mission-oriented research programs and participate in the public debate. Our scientific discoveries lie at the heart of many current technologies used all around the world.
RESEARCH GROUPS

We are known internationally for our excellence and expertise in basic science & technology disciplines. We focus on developing methodologies, understanding complexity in all its shapes and sizes and enhancing system thinking in research as important prerequisites for interdisciplinary research. By combining our strong disciplines, we explore new emerging scientific areas and enable promising innovations in the light of societal challenges. Open science is our standard.
DEPARTMENT OF MECHANICAL ENGINEERING

MICROSYSTEMS

Our mission is to develop innovative technological concepts and fabrication methods for microsystems for a wide range of applications. Our concepts are often inspired by biology, and our microsystems are often applied to understand biological processes that are important for health and disease.
FULL PROFESSOR

KEES STORM

"Living biological materials are very special. They last for a lifetime, literally, through constant renewal and self-repair. They provide tremendous inspiration for new materials design."

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Connecting Pure to the web
RESEARCH LABS

Innovation begins with people. People who are open, passionate, curious, professional and connected. People who nourish dreams and ideas. It results in a lively community where knowledge and brilliant minds from inside and outside the campus actually meet and work together in order to do pioneering research on societal challenges and issues. In order to conduct this groundbreaking research, to attract outstanding scientific talent, and to train new generations of engineers, we have state-of-the-art research labs and facilities at our disposal, of which some are unique in the Netherlands, or even in the world.
GRANTS & AWARDS

Many TU/e researchers are among the world’s elite within their discipline. We are proud to share our researchers who have received honorable distinctions, research subsidies or awards for their scientific research.
End of backup slides
Support: Pure FAQ + Invision + Topdesk

FAQ: section on integration specifics
Invision: interactive demo of relations between Pure content and web display
Source of web issues can be daunting for researchers: Topdesk as dispatcher
Improving integration: datamodel

- Highlighted content + sorting on all relational data
- Provide persistent links from data to portal (valid permalink in api)
- Classification + rich text editor on every descriptive field
- Impacts vs research areas?
Improving integration: Pure API

• Should always provide access to all display parameters: ordering, highlighting
• Field limiter currently not suited to produce lists for websites
• API used to pick up changes for the website and connect pages
• /changes is the key endpoint:
  • Performance
  • Needs more granularity on changes:
    • Parameter for people, publications, highlights, etc. changed
• CRUD!
Improving integration: Portal

- Basic theme – good (don’t ask for a CMS!)
- Consistent free text search, concept optional (researcher = free text, organization = concept?)
- Improve page structure:
  - Tabs to organize information
  - Move lists to tabs: publications at projects, equipment at labs, etc.
- Consistent linking:
  - Direct urls to specific tabs (i.e. researcher publications)
  - API discloses direct urls
Project key learning points

1. Researchers need web presence to promote themselves and their research, not the university
2. The Pure portal is not an organization website and should not be treated as one
3. Manage communication staff expectations towards #1 and #2
4. Keep integrating (agiled) as an ongoing development based on Elsevier fixes and improvements to the research information chain (HR, finance, projects)
5. Manage communication staff expectations towards #4
6. Researchers tend to value the portal over research website
7. Data quality issues in Portal = OK: motivates users to improve data
Thank You

Site: tue.nl/research
Portal: research.tue.nl
FAQ: purefaq.tue.nl
n.veenstra@tue.nl