

Humboldt Kolleg 2026

Beyond Extraction: Designing Culturally-Resilient Technologies for Africa's Digital Sovereignty

Convener: **Prof. Dr.-Eng. Thomas Djotio Ndie**

Venue: National Advanced School of Engineering of Yaounde (ENSPY), University of Yaounde I, Amphi 200

Dates: 10–13 May 2026 | Yaounde, Cameroon

DAY 0 – Sunday, 10 May 2026

Theme: **Dinner — Informal discussion**

Time	Session	Speakers / Moderators	Notes
19:00–21:00	Welcome Dinner at Technipol Hall, National Advanced School of Engineering of Yaounde (NASEY/ENSPY)	All participants	Warm and friendly reconnections; arrival of participants; informal exchanges.

DAY 1 – Monday, 11 May 2026

Theme: **Foundations — Digital Extractivism and Cultural Agency**

WELCOME & OPENING

Registration, Ceremony, and Institutional Framing

Time	Session	Speakers / Moderators	Notes
08:00–09:00	Registration & Networking Coffee	Protocol team / hostesses	Arrival of delegates.
09:00–10:30	Opening Ceremony	Convener; AvH representative; DAAD representative; German Embassy representative; ANTIC; ENSPY; Rectorate of UY I	Welcome addresses and institutional opening.
10:30–11:00	Keynote I – Africa's Digital Turn and Local Agency	Prof. Dr.-Eng. Thomas Djotio Ndie Chairs: Profs Paul Wofo & Fidele Ntie-Kang	Local innovation, resilience and contextual digital transformation.
11:00–11:30	GROUP PICTURES & COCKTAIL	All participants	Group pictures, cocktail and informal networking.

PLENARY SESSIONS

Mathematical, Economic, and Engineering Dimensions of Digital Sovereignty

Time	Session	Speakers / Moderators	Notes
11:30–12:00	Keynote II – Mathematical Foundations for Resilient and Sovereign Digital Systems in Africa	Speaker: Prof. Dr. Mama Foupouagnigni & Prof. Dr. Patrick Njionou Sadjang Chairs: Prof Dieudonné Ndjonka & Jean Sire Eyebe Fouda	Mathematic Fundamental of digital extractivism
12:00–12:30	Keynote III – Digital Extractivism, Economic Dependency, and Africa’s Quest for Digital Sovereignty	Speaker: Prof. Dr Clovis Miamo Wendji Chairs: Profs Achille Jean Jaza Folefack, Alain Meli L.	Economic dimensions of digital Extractivism
12:00–12:30	Keynote IV – Engineering Digital Systems for Inclusive and Sustainable Development	Speaker: Prof. Dr Gaël Pentang (Germany) Chair: Profs Blaise Romeo Nana Bendjo & Rosemary Tonjock	AI & infrastructure
12:30–13:00	Presentation – Programmes of the Alexander von Humboldt Foundation	Speaker: Prof. Dr Gratien Atindogbe (Ambassador, AvH)	Overview of funding schemes and networks
13:00–14:00	Lunch Break	All participants	Networking lunch.

PARRALLE SESSION N° I

Data Sovereignty & Infrastructure Resilience / Language, Culture & AI Interfaces

Time	Panel 1/1 Data Dependency and Digital Sovereignty Chairs: Prof. Dr. Gael Pentang Prof. Dr. Paulin Meletagia	Panel 1/2 Language, Culture & AI Interfaces Chairs: Prof. Dr. Gratien G. Atindogbe Prof. Dr. Eunice Ngongkum
14:00–14:10	Ndifon Sekse Eugene: Nonlinear dynamics of RTD-based optoelectronic oscillators for high-frequency communication systems and digital sovereignty	Paul Zang Zang: Regulationist sociolinguistics as a response to contemporary sociolinguistic challenges
14:10–14:20	Ing. Jean Yves Etougue: Digital sovereignty through resilience: toward a self-adaptive mobile operating system designed for African realities	P. Woafu: Optimising the acoustic response of the African calling drum and the digitalisation of its tunes
14:20–14:30	Alphonse Tabue Kamga: A unified energy management framework for autonomous PV-battery systems toward resilient technologies for rural Africa	Alain Cyr Pangop Kameni: Cultural Intelligence meets Artificial Intelligence: local culture as a foundation for technological resilience in Africa
14:30–14:40	Dr. Etienne Wamba: Quantum computers: myth or reality?	Prof. Dr. Eunice Ngongkum: Investigating the dynamics of digital extractivism in African literature
14:40–14:50	Djonyang Nicolas: Real-time characterization of the complexity of dynamical systems	Jean Bertrand Miguoue: Restitution and cultural extractivism in a postcolonial and digital context
14:50–15:00	Rachel Ojong: Dual Archives as Moral Infrastructures: Access, Ownership, and Circulation in the Digital Documentation of Nsiteu (Cameroon)	Nfon Rita Gola: Transcultural perspectives in Tochi Onyebuchi’s War Girls
15:00–15:10	Dr. Bel Youssouf G. Mountessou : Harnessing fungi for the discovery of anti-infective and cytotoxic natural products by integrating computational tools: a framework for non-extractive, context-aware drug discovery in Africa	Mbiafeun Annie: Beyond extractivism in language studies: from foreign languages to national languages
15:10–16:00	Juslin KUTCHE NEGOUÉ : Réseaux de capteurs IoT pour la santé communautaire en milieu rural africain : vers une télémédecine souveraine et offline-first	Judith Soulamite Nouho Noutat : Energy-Saving Multipath Routing Using Traffic Classification in Software-Defined Wireless Community Networks for Resilience and Efficiency in Rural Areas
16:00–16:30	COFFEE BREAK	

PARALLEL SESSIONS N° II

Frugal Innovation & Health / Governance, Ethics & Sustainable Development

Time	Panel 2/1 Frugal & Resilient Innovation Chairs: Prof. Dr. Telesphore B. Nguелеfack Prof. Dr. Bernabe Batchakui	Panel 2/2 Governance & Ethical Frameworks Chairs: Prof. Dr. Clovis Miamo Wendji Prof. Dr. Tchackoute
16:30–16:40	Christiana Ngyeti Nyikob Mbogue: Influence of Land Use Change on Plants, Soil and Arbuscular Mycorrhizal Fungi in the Lebialem Highlands Cameroon	Fidele Ntie-Kang: Lessons learned from data curation on natural products from African sources
16:40–16:50	Albert Enama Ehinak: Spirooxindoles as blocking agents of SARS-CoV-2 spike/ACE2 interaction	Pr. JAZA FOLEFACK Achille Jean: Benefits from tree species diversification in cocoa agroforests in the Centre Region of Cameroon
16:50–17:00	Daniel Kosini: Toward frugal digital entomology in Africa for managing agricultural pests and disease vectors in low-connectivity settings	Mrs Elouga Emeline Ingrid: Forest royalties and local development in Cameroon: questioning the financial autonomy of decentralised local authorities
17:00–17:10	Mengoue Tekeu Edmond Loic: Identification of Schistosome species in cattle and the need for a One Health approach	Ruth WAFANG: Archaeological research in Central Cameroon: achievements and perspectives for sustainable development
17:10–17:20	Aliance Romain Fokoua: Analgesic effects of Psychotria camptopus stem bark extracts on inflammatory pain in mice	Antonia Katthaen: Students as facilitators of co-design processes in agriculture: insights from the Minodu project on local community networks in rural areas of Togo
17:20–17:30	Ignas Tonle Kenfack: Aminated MIL-101(Cr) as an electrode component for simultaneous detection of paracetamol, diclofenac and tartrazine	Madie Stephe Arrielle Djotio: Digital adoption, governance and fiscal efficiency: evidence from Cameroon
17:30–17:40	Maurice Ducret Awouafack: Bioactive constituents and semi-synthetic derivatives of Eriosema glomeratum	Prosper Djoursoubou (Antic): Legal Aspect of Digital Extractivism
17:40–17:50	Josker Nghokeng: Annonaceae plants in Cameroon as a source of new species and secondary metabolites	Pierre Carole Bella: Valorisation de la fonge coprophile africaine : Approches biotechnologiques pour la découverte de nouveaux métabolites secondaires antimicrobiens et cytotoxiques
17:50–18:00	— Remaining time / Open Q&A —	— Remaining time / Open Q&A —

EVENING GATHERING

Humboldt Alumni Networking & Welcome Dinner

Time	Session	Speakers / Moderators	Notes
18:00–19:00	Humboldt Networking Meeting	Cameroon Alumni Chapter	Alumni exchange and coordination.
19:00 onwards	Welcome Dinner & Cultural Evening	All participants	Technipol Hall; performances around the idea of 'Digital Africa'.

DAY 2 – Tuesday, 12 May 2026

Interdisciplinary Synergies, Junior Researchers Forum, Frugal Innovation and Ethical Governance

PLENARY SESSIONS

Mathematical, Economic, and Engineering Dimensions of Digital Sovereignty

Time	Session	Speakers / Moderators	Notes
09:00–09:30	Opening Remarks, Recap & Objectives	Chair of the day	Day overview and transition from foundations to co-creation.
09:30–10:00	Keynote V – Gender Equity in STEM as a Pathway to Culturally-Resilient Technologies and Africa’s Digital Sovereignty	Prof. Dr. Rosemary Tonjock Kinje Chairs: Profs Gustave Simo & Thierry Dongo	Gender equity and resilient technologies.
10:00–10:30	Keynote VI – Beyond Data Extraction: Building Sovereign AI and African Language Technologies for Inclusive Digital Futures	Prof. Dr. Paulin Meletagia Chairs: Profs	AI, language technologies and digital sovereignty.
10:30–11:00	COFFEE BREAK	All participants	Informal networking and refreshments.

PLENARY SESSIONS

Interdisciplinary Synergies, Junior Researchers Forum, Frugal Innovation and Ethical Governance

Time	Session	Speakers / Moderators	Notes
11:00–12:30	Design Thinking Workshop – Technologies Co-Creation	Senior supervisors and multidisciplinary teams	Breakout design topics: health, education, agriculture, and culture-language interfaces.
12:30–13:00	Keynote VII – African Digital Sovereignty: Mathematical Tools to Escape the Extraction Trap	Prof. Dr. Calvin Tadmon Chairs: Profs E. Wamba & S. Bowong	Formal tools against extractive dependence.
13:00–14:30	Lunch Break		Networking lunch.
14:30–15:00	Keynote VIII – From Digital Divide to Digital Sovereignty: Inclusion, Rights, and Africa’s Digital Future	Prof. Dr. Gratien G. Atindogbe Chairs: Profs Jean Duplex Wansi & Alain C. Pangop Kameni	Digital inclusion and rights-based futures.
15:00–15:30	Keynote IX – Closing the Usage Gap with Trustworthy AI: Data Mining and Intelligent Systems for Culturally-Resilient Africa	Prof. Dr. Norbert Tsope Chairs: Profs Leon Tapondjou Azefack & Bruno Lenta Ndjiakou	Trustworthy AI and intelligent systems.
15:30–16:00	COFFEE BREAK	All participants	Informal networking and refreshments.

PLENARY SESSIONS

Session III: Junior Voices, Sectoral Applications, Prototypes, and Diplomatic Dialogue

Time	Session	Speakers / Moderators	Notes
16:00–17:00	Junior Researchers Forum & Cluster-Based Co-Creation Dialogue	Moderators: selected senior scholars, Humboldt fellows, and cluster leads	One-hour guided dialogue organised around the four co-creation challenges of the mini-hackathon: Health (supporting patients or caregivers in emergency contexts), Agriculture (supporting rural farmers under uncertainty and weak infrastructure), Urban Mobility (supporting travelers and drivers in chaotic city mobility), and Proximity Commerce (supporting bayan-sellam in informal trade). The session will foster interdisciplinary exchange between junior and senior participants, while helping each cluster identify early directions for locally grounded, frugal, and socially meaningful technology concepts.
17:00–17:30	Keynote X – From Pharmacological Knowledge to Digital Sovereignty: Designing Context-Aware Health Technologies for Africa	Prof. Dr. Telesphore Benoit Nguefack Chairs: Profs Nukine & Tchakounté Kouamo	Health, pharmacology and context-aware technology.
17:30–18:00	Keynote XI – Engineering Inclusive Learning Futures: E-Learning, AI, and Software Systems Beyond Extraction	Prof. Dr. Bernabe Batchakui Chairs: Profs Maurice Awoufack & Paul Wafo	Education, AI and inclusive learning systems.
18:00–18:30	Keynote XII – Frugal IoT and Edge Architectures for Africa’s Culturally-Resilient Digital Sovereignty	Dr. Anne Marie Chana Chairs: Profs Aloysius Ngefac & Nicolas Niemenak	AIoT, edge systems and infrastructure.
18:30–19:00	Transfer to the Ambassador’s Residence	All invited	Departure from ENSPY.
19:00–21:00	Informal Dinner & Networking	Ambassador’s Residence	Diplomatic networking evening.

DAY 3 – Wednesday, 13 MAY 2026

Policies and Futures — Toward an African Digital Sovereignty Manifesto

Time	Session	Speakers / Moderators	Notes
09:00–09:30	Opening & Agenda Overview	Chair of the day	Synthesis framing for the final day.
09:30–10:30	Mini-Hackathon Synthesis and Prototype Pitch Session	Moderators: Prof. Dr. Atindogbe; Prof. Dr. Nguefack, Dr. Ntonjock. Review Panel: selected senior scholars, Humboldt fellows, and invited discussants.	Synthesis session of the four co-creation clusters (Health, Agriculture, Urban Mobility, Proximity Commerce), combining short reflections, cluster insights, and prototype pitches. The session emphasises contextual relevance, interdisciplinarity, cultural grounding,

			and the practical value of the proposed concepts.
10:30–12:00	Policy Roundtable – Drafting the Yaounde Declaration	Facilitators: Prof. Dr. Tchackoute; Prof. Dr. Eyebe Fouda Jean Sire Armand	Policy dialogue with academia, public actors, civil society and technology stakeholders.
12:00–12:30	Adoption of the Declaration & Closing Ceremony	Convener; guest representatives	Formal closing of the Kolleg.
12:30–13:30	Press Briefing & Farewell Coffee	Organising committee	Media interaction and final networking.

TRACKS
Design Thinking topics for technologies co-creation

Co-creation track	Focus area	Indicative challenge framing
Track A	Health & Frugal Care Technologies	How can Africa design low-cost, context-aware and low-connectivity health technologies that build on local pharmacological knowledge, community practice and explainable AI?
Track B	Education, AI & Inclusive Learning	How can AI-supported learning platforms remain useful under bandwidth constraints while being culturally relevant, multilingual and pedagogically inclusive?
Track C	Agriculture, Environment & Rural Resilience	How can frugal sensing, entomology, agroforestry data and rural community networks strengthen food systems and local resilience?
Track D	Culture, Language & Digital Heritage	How can African languages, symbolic systems, heritage objects and creative narratives shape interfaces and digital services that move beyond extraction?

Junior Researchers Forum – recommended facilitation format

- ❖ **10 minutes** – framing by the moderator on expectations, responsibilities and opportunity structures within the Humboldt network.
- ❖ **20 minutes** – guided small-group discussion on academic guidance, mentoring, mobility, collaboration and socio-economic development.
- ❖ **20 minutes** – interdisciplinary exchange on how African digitalisation is perceived from different research fields.
- ❖ **10 minutes** – plenary reporting and collection of recommendations for post-Kolleg follow-up.