

828 Davis Rd., League City, TX 77573

**GEOSPATIAL ENVIRONMENTAL DATA SCIENTIST****Earth & Life Sciences | Climate Adaptations | GIS | Remote Sensing| Web Maps & Apps | Python**

I am an environmental data scientist, geophysicist, soil scientist, and inventor with more than 20 years of professional experience in **geospatial data analytics** for **environmental** and **agricultural** applications, development of geophysical instruments, sensors, and software, collaboration with national and international teams. While working as a **Research Scientist** and **GIS Extension Specialist** at **Rutgers University**, and later in **industry** at **RiceTec** and **Bayer**, I also provided “**Land Advice**” worldwide by developing efficient solutions (geophysical sensors and GIS software) to map and monitor environmental resources, reduce risks, and promote ecosystem sustainability.

- **Invented** compact field geophysical meter, **LandMapper®** to measure electrical conductivity (EC), resistivity (ER), and potential (EP) in soils and plants for environmental assessment, precision agriculture, forestry.
- **Registered** USPTO Trademarks: LandMapper®, Landviser®, and Enlightening Research®
- **Published** 50+ works including 4 books, 9 peer-reviewed articles, 14 proceedings, and >40 abstracts.
- **Served** as **PI/coPI** in 11 granted projects from government and private agencies in USA and EU focused on **agricultural data management**, renewable energy, **environmental quality**, and **land development**.
- **Expanded** Landviser’s network to over 1000 qualified leads with geo-technical interests including clients from multiple **USDA/NRCS**, **USGS**, **DOD**, and **DOE** offices.
- **ArcGIS Online Portals (developed 500+ interactive maps/apps and trained 15+ users):**
  - Disaster Monitoring and Mapping - **Storm Watch App**, **Harvey Damage Imagery**
  - Sustainability of Worldwide Rice Production - <https://ricetec.maps.arcgis.com>
  - Earth Observation with Geophysics - <https://g-eo.maps.arcgis.com>
- **Developed Geo-Software** (Python): UAV imagery ML, **crop DSS**, weather modeling, **soil mapping**.
- **Designed** and **maintained** [Landviser.com](http://Landviser.com) /.net **websites** (html, PHP, WordPress, Drupal)
- **Set up** Landviser XYZ - Geo Project Management **Portal & Mobile App** <https://in.landviser.xyz>

**EDUCATION**


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<b>PG Diploma in Machine Learning &amp; Artificial Intelligence (ML &amp; AI)</b>	
EMERITUS & Columbia University Engineering Executive Education, NY	<b>2020-2021</b>
<b>Ph.D., Soil Science</b> (Thesis on <b>Geophysics, GIS and Geostatistics</b> ).	
University of Wyoming, Laramie, WY	<b>1997-1999</b>
<b>Ph.D., Environmental Biology</b>	
Lomonosov State University, Moscow, FSU	<b>1992-1995</b>

**CERTIFICATIONS**


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<b>Texas Ideation Discovery Camp</b> - competitive program in collaborative design thinking (WKI method)	
SBDC Technology Commercialization and <b>EPIcenter</b> , University of Texas San Antonio	<b>2022</b>
<b>Climate Services for Adaptation</b> using Copernicus – <b>led</b> international study group and <b>presented</b>	
<b>Exemplary Case Study on Rice Crop Climate Adaptation</b> , Wageningen University, NL	<b>2021</b>
<b>Python for Data Science Certificate</b> – EMERITUS	<b>2020</b>
<b>ESRI Bronze Business Partner</b> and <b>Consultant</b> on <b>GIS software</b> integrations	<b>2020</b>
<b>SEEQUENT Channel Partner</b> and <b>Trainer</b> on <b>geophysical software</b>	<b>2020</b>
<b>DOT-FAA Certified Remote Pilot 107 - SMALL UNMANNED AIRCRAFT SYSTEM</b>	<b>2019</b>
<b>DSSAT Ver. 4.5: Assessing Crop Production, Nutrient Management, Climatic Risk and Environmental Sustainability with Simulation Models</b> – ICASA & the University of Georgia, GA	<b>2008</b>

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**TECHNICAL SKILLS**

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- **GIS & Earth Observation Data**
- **Data Sources:** Copernicus, TIGER Census, NASS, [WHO\(GHO\)](#), FAO Crops, [NASA](#), USDA, EPA, USGS ([flooding](#), [imagery](#))
- **Open-Source GIS:** QGIS, PostgreSQL, GDAL-based libraries
- **ESRI Platform:** ArcGIS Pro/ArcMap 10.x – Business, Spatial, and Image Analysts Ext, ArcPy
- **ESRI UC/MOOC:** “*Spatial Data Science: The New Frontier in Analytics*”, “*Image Analysis*”, “*Leveraging Big Data in ArcGIS*”, “*Do-it-Yourself Geo Apps*” (2014-2021)
- **Cloud GIS:** ArcGIS Online Portals (three) development and management
- **Remote Sensing:** developed **UAV image collecting** and **analytics** software, **FAA107 Pilot**
- **Climate Services for Change Adaptation** from **Copernicus Climate Data Store (CDS)**
  - **Data Science**
- **Data Engineering:** Python (Pandas, GeoPandas, NumPy, OS, PIL, OneHotEncoder), MS Access, SQL, CSV, geoJSON, KML, XML, HTML, JPG, TIFF, GPX, NetCDF
- **Visualization:** MS Excel & Power BI; Python (Matplotlib, Seaborn);
- **Physical Models:** customized Fortran models for **Geostatistics, Hydrology, & Crop Management** DS software
- **Statistics & ML:** probability, ANOVA, regression (ridge, logistics, lasso), supervised and unsupervised classifications (random forest, KNN, SVM), recommenders, PCA, model selection, feature importance; Python (SciPy, Scikit-learn)
- **AI:** constraint satisfaction, reinforcement learning, logical agents; Python (geo-image recognition, time series)
- **Python Developer:** Anaconda (Jupyter Lab), VS Code, [GitHub](#), Stack Overflow, REST APIs, Google Colab
  - **Business Systems’ Admin and Web Developer**
- **Web Design & SEO:** HTML5, JavaScript, MkDocs, CMS ([Drupal](#) and [WordPress](#)), cPanel Admin, MySQL
- **Webhost:** prototype, stage, test, and deploy web apps on **shared hosting** (A2)
- **Office in Cloud Admin:** Office365 + **SharePoint Sites**; **Google Workspace Suite**

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**EMPLOYMENT HISTORY**

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**ENVIRONMENTAL DATA CONSULTANT – Landviser, LLC** (League City, TX)(work from home office or at clients’ field sites, self-employed, 40+ hours/week) **June 2021 – Present**

Landviser LLC is my personal consultancy. I consult on **agriculture, soil science, geophysics, remote sensing**, and **GIS** for diverse clients by developing sensors, geo-enabled interactive web maps and apps and providing system integrations and BI analytics (GIS, Image analysis, Big Data) of **geospatial** data across industries:

- Presented seminar “**Geophysical Sensors** and Mechanistic Models Aid Sustainable Farming” for **USDA ARS** Adaptive Cropping Systems Laboratory, Beltsville, MD (Aug 2023).
- Developed an **API** (2023) and **spatial database** (Flask, PostgreSQL, Python) for rescaling soil properties from **SSURGO** to a whole-field basis to estimate **GHG emission** for “**Sustainable Rice**” certification.
- **Satellite imagery analysis**, literature search, and report preparation to **quantify pistachios vigor** improvement in response to **artificial pollination** for Satellite Imaging Corp (TX) and Edete (Israel).
- **Climate data** from **NOAA** and **soil GIS** for assessment of risks and potential for **rice seed production** in Turkey, Brazil, India (for RiceTec Inc – USA-India-LATAM).
- **GIS modeling**, literature search, and report preparation on a project “**Crop adaptation to soils under climate change**: onions and sweet potatoes” for ClimateAI.
- Led **field geophysical surveys** (Nov 2021 and Mar 2022) for archaeology and agriculture and integrate **LIDAR imagery** with sensors data, **popularizing soil science**, geophysics, **GIS**, and remote sensing among **farming communities** in **IA** and **IL**.

As a scientific editor for **Environmental Science**, **Energy**, and **Sustainability** topics for CACTUS Communications (remote contract, Aug - Dec 2022), I helped ESL researchers publish their works in high impact journals by leveraging my expertise in technical English writing and scientific publication process compliance at major publishing organizations (Springer, Elsevier, Wiley, SEG, etc.).

As a remote consultant for PARSEC Consortium of two EU companies I prepared a successful grant proposal “*Crop Predictions Take flight – Linking Genomics and Geophysics*” under HORIZON2020 research and innovation program (Dec 2020 – Nov 2021). My R&D contributions:

- Linked crop **genotype** with **Earth Observation** (EO) data improving ML crop phenotype prediction model for Computomics GmbH (Germany),
- Coordinated R&D for **EMGeoDrone** for SiberGeo (Estonia) **integrating sensor’s data streams with EO data** and developed training materials for end-users.

## SENIOR GEOSPATIAL DATA STEWARD

**Bayer Crop Science** (contractor via Rose International IT staffing agency)

(remote from home office, full time, 40 hours/week)

**June 2020 – May 2021**

At agile **Location360** IT Team I facilitated **imagery**, climate, **soils**, sensor feeds, customers, and geopolitical data/APIs **QA** across **Bayer's Global Data Assets**, maintained company IP and client data security:

- Supported internal business users on **Win** and **iOS**,
- Developed technical documentation for internal **GIS Knowledge Portal** (MkDocs, MS SharePoint),
- Automated Python scripting for **imagery collection migration** (GitHub Enterprise, VS Code),
- **QA/QC** on geopolitical dataset (multiple countries) from external vendor (QGIS, PostgreSQL).
- Participated in daily **Scrum** meetings for Imagery Vertical team, helped with **code review** and testing
- Served as a **liaison** between **software developers** and business **project owners**

## DATA SCIENTIST II - *RiceTec Inc* (Alvin, TX)

(field, lab, and office work, full-time, 40 hours/week)

**Jan 2016 - June 2020**

Led projects involving geospatial analysis of rice genetics, environments, and farm management data. Nurtured relations with RiceTec’s seed production agronomists and tech support reps as well as with external crop consultants, rice farmers, university researchers, service providers, and business partners:

- Coordinated crop management data collection through **SmartRice** Initiative (since 2015), developed training manuals, prepared, and analyzed data on sustainable fertilizer and water usage.
- Analyzed multi-year multi-rate **nitrogen fertilizer** trials and developed recommendations for rates and management based on hybrid genetic makeup and soil types.
- Analyzed **10+ years** of hybrid seed **production geospatial** data to optimize annual planting plan based on whole field’s soil quality and yield potential.

Developed Python applications and **trained internal “Drone Team”** on best practices in image collecting and processing (RiceTec’s *We Innovate* Award, 2019):

- Calculate Rice Flowering % from raw **DJI Drone Imagery** (on MS Azure Server, **led** India dev team)
- Rice Seedling Counts **Maps** from **DJI** and **Sentera cameras** (Flask App, **led** Eastern Europe team)
- Weather **GIS Risk Assessment Tool** for expanding business globally (Jupyter NB, ArcGIS Pro)

## GEO-DATA SCIENTIST I - *Rice Technology Solutions Inc* (Clear Lake, TX)

(field and office work, full-time, 40 hours/week)

**Aug 2010 – Dec 2015**

Prepared a strategic plan for unifying **Geo-BI** across three **RiceTec AG global companies**, incorporating GIS, Remote Sensing, Environmental Analysis, and Crop Modeling:

- Build and maintained **ArcGIS Online Portal** featuring rice-related interactive maps and apps (>400 private maps and feature layers), managed, and trained 10 users.
- Managed data collection and GIS modeling to **alleviate salinity on the farmers' fields** in TX, LA, and PR after **hurricanes**.
- Conducted rice (seed and consumer) econometric and environmental analysis for opportunities in established and potential markets worldwide (USA, India, China, LATAM) supporting business.

**DEVELOPMENT SCIENTIST *RiceTec Inc* (Alvin, TX)**

(field and office work, full-time, 40 hours/week)

**Sept 2005 – July 2010**

Established RiceTec's **GIS program** and **trained tech service specialists** and agronomists in GIS-driven farm management. Presented research fundings at farmers' meetings in rice-growing regions.

Analyzed **Genotype by Environment** interactions in hybrid rice seed production in USA and worldwide (RiceTec Inc - **Beachell Award** - for **excellence in scientific accomplishment** contributing significantly to company goals, 2007):

- Build historical **GIS** of company's and universities' **rice hybrids** and **varieties yield trials**, analyzed **Genotype x Environment** interactions, and established **five performance-ranked regions** in the US.
- Analyzed heterotic block field trials determining heterotic groups, which were used for selecting the most promising parent lines for crossing to increase hybrid yields through maximizing heterosis.

**ASSOCIATE GIS SCIENTIST - *Rutgers University* (Chatsworth, NJ)**

(field, lab, and office work, full time, 40 hours/week)

**Aug 1999 – July 2005**

Assisted in **teaching Soil Science, Soil Physics** courses, presented research fundings at **farmers' workshops** and scientific conferences. Wrote three successful grant proposals to support **precision agriculture** practices on **high value perennial crops**. Developed **Best Management Practices** for soil mapping based on **electrical conductivity** with LandMapper® and different **remote sensing** sources (CIR air-photos and hyperspectral images, multispectral satellite images in ERDAS IMAGINE).

**USDA-NASA Grant:** Co-PI on "Enhanced **management of agricultural perennial systems** (eMAPs) using **GIS** and **Remote Sensing**" in Initiative for Future **Agriculture** and Food Systems (**IFAFS**) Program, \$650 000, Rutgers University, my contribution valued at \$300 000 in proposal preparation and subsequent research and extension activities.

**RESEARCH and TEACHING ASSISTANT - *University of Wyoming* (Laramie, WY)**

(part-time, during graduate study, 20 hours/week)

**July 1997 – Aug 1999**

Presented at ASA-CSSA-SSSA annual meetings and other conferences, wrote scientific publications. Served as Teaching Assistant in graduate courses on Soil Physics (**water flow computer modeling**) and **Geostatistics** using GSLIB, ArcView 3.1, and **FORTTRAN**. Conducted research on application of statistical and geostatistical methods for achievement of accuracy and cost-efficient sampling design in soil mapping.

- **Individual Research Grant** #97-47047-FSU "Peat deposits: energetic and ecological aspects of usage" John D. and Catherine T. **MacArthur Foundation** - Peace and International Cooperation. \$14,955.

***LANGUAGES and STATEMENT of USA WORK AUTHORIZATION***

I have been studying and working in the US since 1997 and have become a naturalized US Citizen in 2006 (Oath taken in Houston, TX).

Fluent in English and Russian. Intermediate Ukrainian.