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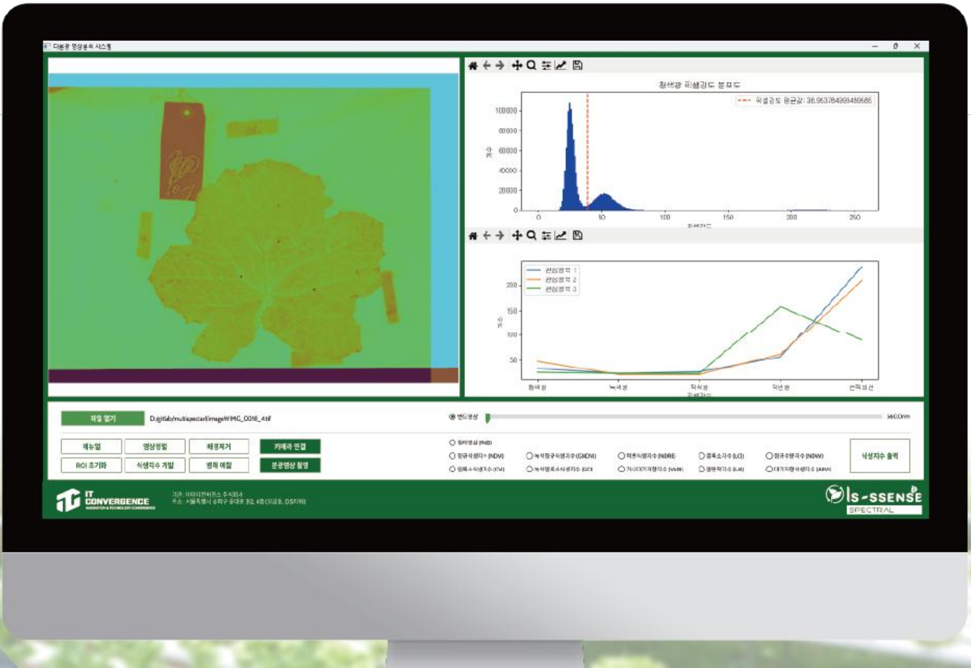
IS-SSENSE SPECTRAL

Multispectral Vegetation Index Monitoring Service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청색광 픽셀강도 분포도
픽셀강도 평균값
100000
80000
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20000
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200
250
관심영역 1
관심영역 2
관심영역 3
청색광
녹색광
적색광
적변광
근적외선
파일 열기
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밴드영상
560.0nm
매뉴얼
영상정렬
배경제거
카메라 연결
ROI 초기화
식생지수 개발
병해 예찰
분광영상 촬영
식생지수 출력
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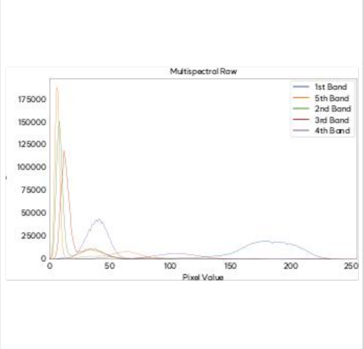
is-ssense.com

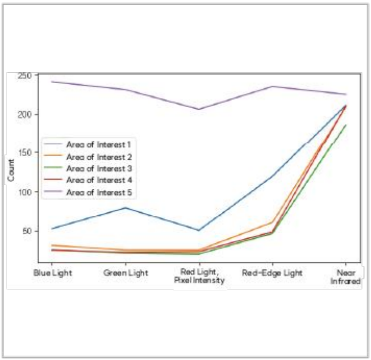
Multispectral Vegetation Index Monitoring Service

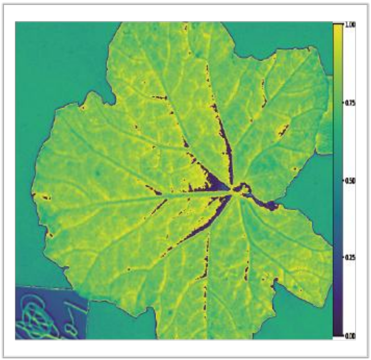
01 Product Features

Crop Spectral Analysis and Vegetation Index Monitoring Service

- Utilizes five spectra, adding Red-Edge to the existing color (RGB) and Near Infrared (Near IR) spectra
- Calculates ten applicable agricultural vegetation indices, including NDVI
- Features new vegetation index development and disease-scouting capabilities

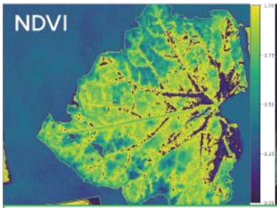


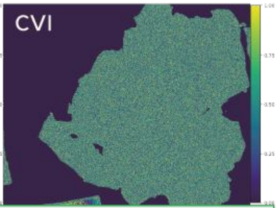



1.00
0.75
0.50
0.25
0.00

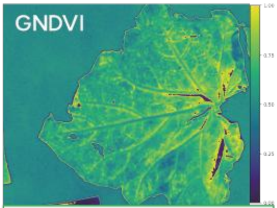
- Analyzes fruit flesh, sugar content, diseases, etc., through the distribution of pixel intensity in each spectral band and comparison of pixels in areas of interest
- Analyzes chlorophyll content, growth conditions, environmental factors, etc., using known vegetation indices

02 Vegetation Index Classification

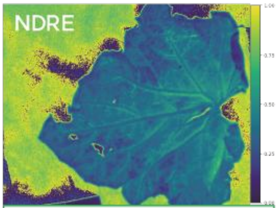




Chlorophyll Quantity



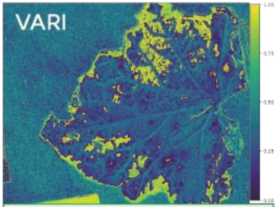
Chlorophyll Distribution



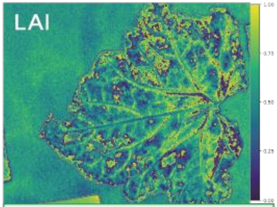
Chlorophyll Density

Chlorophyll Content

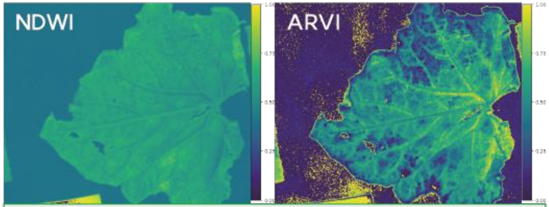
- Vegetation indices indicating chlorophyll content (NDVI, GDNVI, NDRE, etc.)
- Chlorophyll content includes quantity, distribution, density, etc.



Growth Activity



Growth Amount



Growth Stress

Growth State

- Vegetation indices indicating growth state (VARI, LAI, NDWI, etc.)
- Growth state includes activity, amount, stress, etc.

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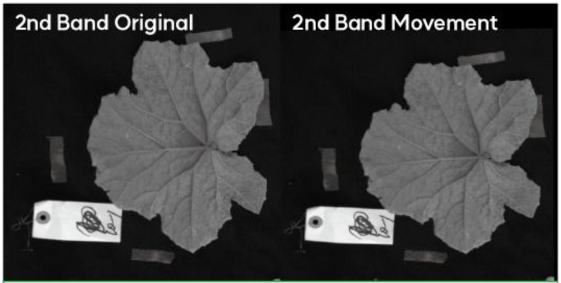
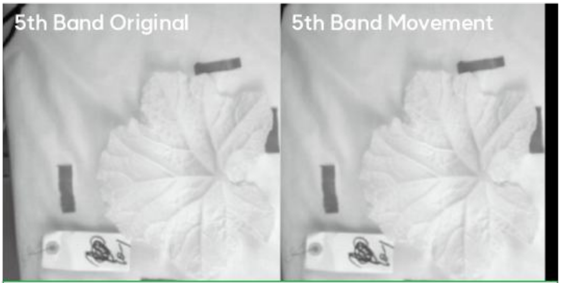
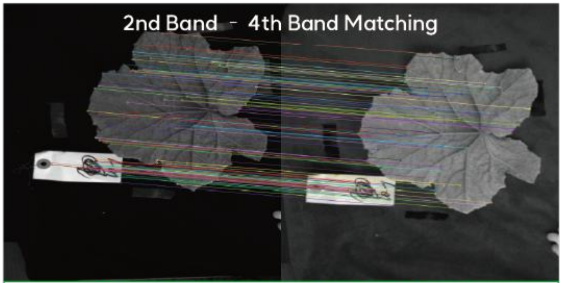
03 Service Features


2nd Band Original
2nd Band Movement

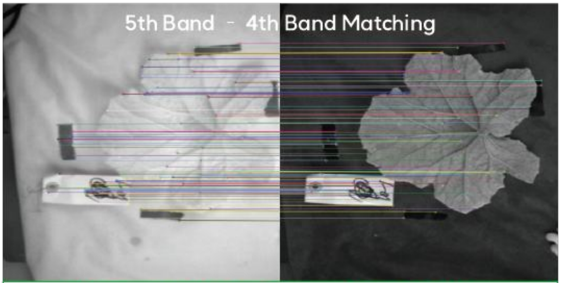
2nd Band Alignment


5th Band Original
5th Band Movement

5th Band Alignment


2nd Band - 4th Band Matching

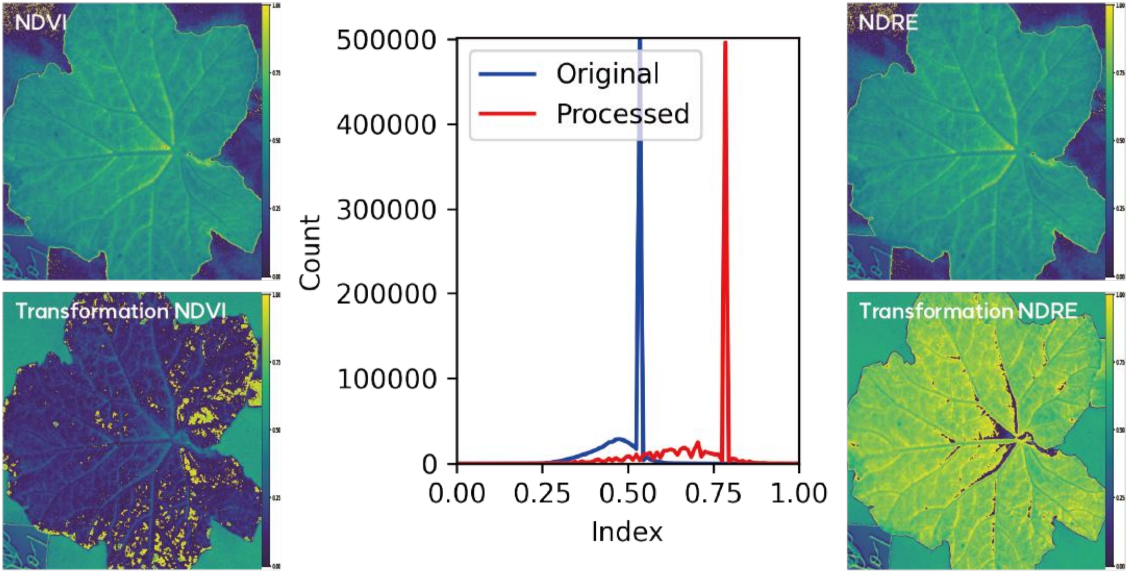
2nd Band + 4th Band Feature Point Matching


5th Band - 4th Band Matching

5th Band + 4th BandFeature Point Matching

Deep learning-based feature point matching and alignment

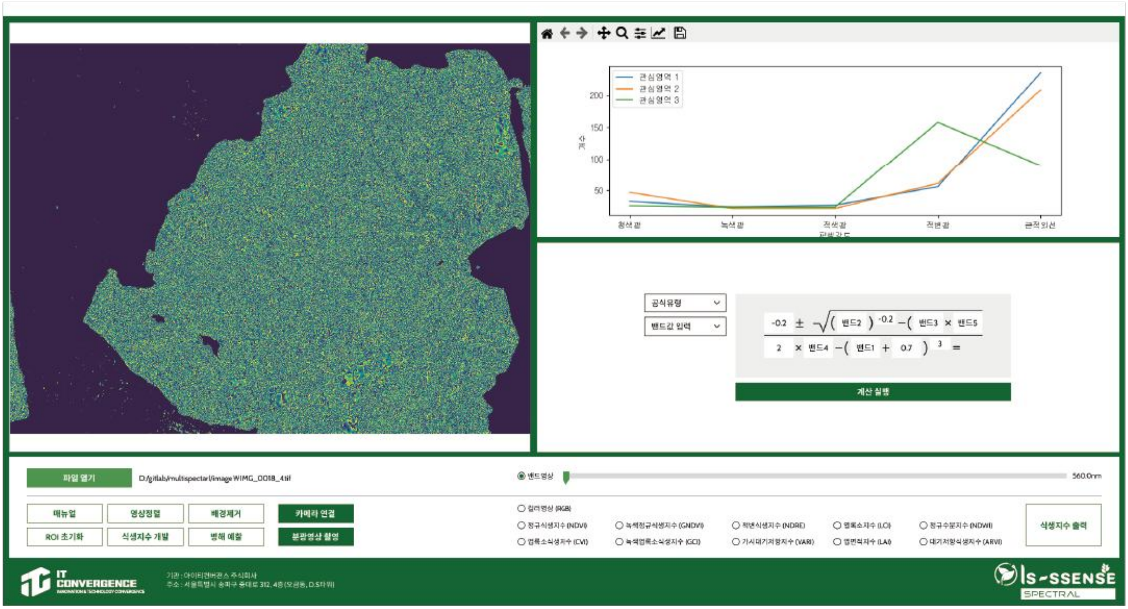
- Aligns multispectral images with different phases into a single view by extracting feature points



Applies vegetation index transformation algorithm

- Transforms various vegetation indices into a uniform index range
- Uses transformation algorithms such as axis shift and normalization for clear distinction of unique areas

Multispectral Vegetation Index Monitoring Service


관심영역 1
관심영역 2
관심영역 3
200
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100
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청색광
녹색광
적색광
적변광
근적외선
공식유형
밴드값 입력
계산 실행
파일 열기
매뉴얼
영상정렬
배경제거
카메라 연결
ROI 초기화
식생지수 개발
병해 예찰
분광영상 촬영
● 밴드영상
○ 컬러영상 (RGB)
○ 정규식생지수 (NDVI)
○ 녹색정규식생지수 (GNDVI)
○ 적변식생지수 (NDRE)
○ 엽록소지수 (LCI)
○ 정규수분지수 (NDWI)
○ 엽록소식생지수 (CVI)
○ 녹색엽록소식생지수 (GCI)
○ 가시대기저항지수 (VARI)
○ 엽면적지수 (LAI)
○ 대기저항식생지수 (ARVI)
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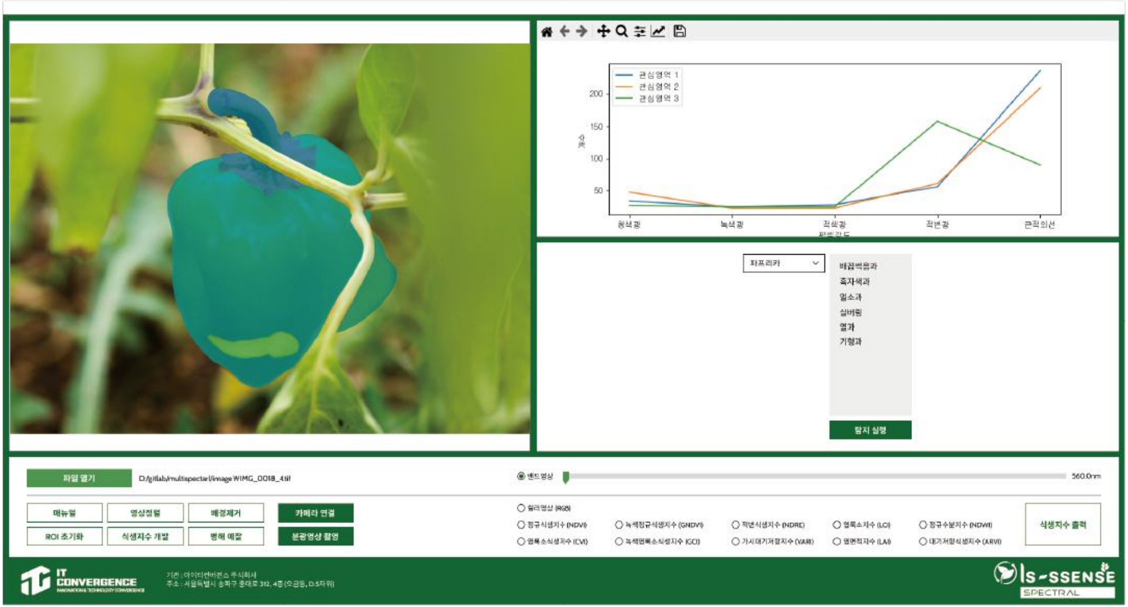
$$\frac{-0.2 \pm \sqrt{(\text{밴드2})^{-0.2} - (\text{밴드3} \times \text{밴드5}}}{2 \times \text{밴드4} - (\text{밴드1} + 0.7)^{3}} =$$

D:/gitlab/multispectral/image WIMG_0018_4.tif

● 밴드영상 560.0nm

기관 : 아이티컨버전스 주식회사
주소 : 서울특별시 송파구 중대로 312, 4층(오금동, D.S타워)

Vegetation Index Development – Develops vegetation indices representing specific growth states not covered by known indices (e.g., measuring the sugar content of melons)


관심영역 1
관심영역 2
관심영역 3
200
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계수
청색광
녹색광
적색광
적변광
근적외선
파프리카
배꼽썩음과
흑자색과
일소과
실버링
열과
기형과
탐지 실행
파일 열기
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Disease Scouting - Early scouting of diseases specific to crop types

[Expected Benefits]

- Identifies and monitors crop conditions invisible to the naked eye, providing agricultural management solutions.

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